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- |                               |  |    |
|-------------------------------|--|----|
| <b>Cultakes</b>               | <i>Roger Cook completes last season's Christmas garden</i>                 | 14 |
| <b>House Calls With Steve</b> | <i>Rebeking a '70s doctor in a 1924 Tudor</i>                              | 18 |
| <b>Ask Norm</b>               | <i>Adding a dormer, cleaning a rusty fireplace, tracking good plumbing</i> | 24 |
| <b>Letter From T.O.H.</b>     | <i>The TV insect homeownery considers their annual role</i>                | 30 |

## columns

- |                |   |    |
|----------------|---|----|
| Columns        | <b>Gardens Under Glass</b>  | 34 |
|                | <i>Florida flowers performed in a greenhouse</i> BY FRANCISCA LEMAR             |    |
| Technology     | <b>On the Same Wavelength</b>   | 40 |
|                | <i>Home networks fit multiple computers and the 'Net</i> BY DAN RASTEN          |    |
| Medicine       | <b>A Safe Fix</b>   | 48 |
|                | <i>Surveys help protect wood floor assets and you</i> BY JENNIFER HUBER         |    |
| By Design      | <b>Cabinet Decision</b>   | 56 |
|                | <i>A built-in bench adds old-world storage to the kitchen</i> BY MARCY STEADMAN |    |
| Traveling Home | <b>Carry On</b>   | 62 |
|                | <i>Gifts to bear the brunt of any load</i> BY CLYTON DELLINGER                  |    |
| Finance        | <b>Holding Patterns</b>   | 66 |
|                | <i>How to keep tabs on your income sources</i> BY KATHY CROSETT                 |    |
| Lifestyle      | <b>Sowing Lessons</b>   | 72 |
|                | <i>Angie Cook seeds a lawn's field goals</i> BY ANGIE SUMMERS                   |    |
| Travel/Leisure | <b>Working Weekends</b>   | 78 |



## plus

Contributors 46 Letters 48 Glossary 144 Where to Find It 146 Classic Program Guide 148 TV Listings 149 Save This Old House 170

**Abstract**

WHEN IT COMES TO INNOVATION,  
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Writer **AMY LAUGHMAN-GRIFFIN** often explores the depths of the imagination. Adams shows how "Creating a New Climate," page 124, advances the very authentic Jewish-Ashkenazi heritage study time while building for the 21st century. "The house had an open plan and casual home office, but a secret further breath like a golden roof and marbled meadows." Having part built her own house north of the city, she especially loves rich textures in porch. "I'd like to add one to my own office window."



**Biographer SAINT WILLIAM** (left) from the successes of big engineering projects. "I like to do low things are put together," he says. This prolific cartoon maker has now the person in the center of the cartooning of our *Saint William* shows him the coming months. ("Creating a New Classic," page 124) While there, Willie Ford also hopes to pick up a few ideas for opposing his own 1913 and order eating home on David's Canyon.



When GEORGE AGES photographed the kitchen window in House Cello ("Personality Change," page 18), he found it a wonder to achieve "I've seen a lot of kitchens in my work, and some seem to be right out of *Harper*—you can't believe anyone actually cooks there. This room is as functional as it is beautiful," he notes. "Reno, whose work is also featured in *"Caliente Occurs"* (By Design, page 56), shows his clients ranging from TONY to Benedict Cumberbatch.

## HOW TO REACH US

EDITORIAL OFFICES

- Write to us at *This Old Moose* magazine, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036
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## LETTERS

### Remembering the Past

I think I enjoyed reading between the lines of *Piper Hudson's* piece about her Kinsch's antiques store renovation ("Postgraduate Work," June 2007) as much as I enjoyed the article itself. It seems that her's quest went beyond the remodeling of her house and into the restoration of his difficult childhood path a side journey into making peace with his deceased father. The creation of his new lovely home from its "ragging, mending, leaving out-to-die" state is the perfect metaphor for his growth as an artist, a homeowner and a young man.

Kudos to her and his brother Noah for a job well done. These story was a joy to read and a delight to breathe!

Maria K. Gomez, Simsbury, Conn.

### Thanks for the Memories

I read with interest your article about tankless, on-demand hot-water heaters ("A Tankless Job," June 2007). I spent some time living in the U.K., and, aside from some frankly terrifying early models, I was much impressed with the systems. They are compact and efficient—and the firms even have some that heat small apartments when not called upon to supply hot water. Brilliant!

In this age of energy-conscious, these systems are something that we should encourage. Keep up the great work.

DAVID R. COOK, TWINSBURG, OHIO, U.S.A.

Before inventing a tankless water heater, you should investigate how it performs under low-flow conditions. During snafu jobs, such as waiting dishes or showering with a low flow head, some units automatically shut off the burner. In our case, attempts to adjust flow, temperature, and thermostats were futile. Filled or leaking showers in cold water, we abandoned our tankless system.

WILLIAM H. BUNN, ALBUQUERQUE, N.M.

Good point! Tankless heaters do require a minimum level of water flow in order to switch on. But as many newer systems, the power "activation point" is at gallons per minute or less—basically a steady trickle.

### Psychic Advice

Psychics don't have crystal balls; they do. I received my June 2007 issue. I opened it to find your Homeowner's Handbook feature on "Laying a Basement Floor." On my kitchen

floor, recently happened to be new landscape plans that call for just such a patio. Your advice will come to fruition when I tackle the project. As an intended do-it-yourselfer, I always seem to find timely and helpful advice in *TDH* magazine. Whether it's filling my basement, refitting my floor, or building my pet-proof sink, you guys seem to anticipate my needs and provide

helpful guidance. Thanks!

WILLIAM L. LAM, SAN FRANCISCO, CALIF.

### Wasting Oil and Water

For years, industries have been eluding and belittling complaints from local government agencies for the type of petulant removal described in "Black Magic" (January, May 2007). Not only should consumers avoid petroleum products for driveway cleaning, they should use environmentally safe (biodegradable) products and make sure they absorb the contaminated runoff and dispose of it properly.

KENNETH KENNEDY, DOWNEY, CALIF., U.S.A.

We share your concern for environmental responsibility and assure you that the cleaning solution applied to the driveway roof tops was both petroleum-free and biodegradable. What we would, however, is that the runoff from cleaning the driveway shouldn't be allowed to reach the soil, but should be absorbed with chemical-free dry cat litter or an equivalent commercial absorbent, which can then be bagged and placed in the trash or taken to your local landfill. For more information on safe disposal of oil and other hazardous waste, visit [www.epa.gov](http://www.epa.gov) or call your state's department of environmental conservation.

### punch list

delighted when it came to my attention that the *Builder's* is a great magazine. The first issue, Volume 1, "Punch List Issue," June 2007, page 103, is by Jeff A. Proctor. Bruce Cramer and Scott O'Connell, Mott's Builders, were the contributors (see p. 103-110).

Received call to action, the 100-page magazine "Punch List" is the magazine for you. It's a great read. You will find it useful. Please inform your local building officials and make sure they are up to date on the latest code changes.

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# OUTTAKES

BEHIND THE SCENES AT THIS OLD HOUSE

BY JORDAN REED

Back in January, when the show wrapped filming at *This Old House's* 2000 fall project in Charlestown, Massachusetts, and the magazine called in writer home, the backyard landscaping was only 70 percent complete ("The Outsiders," March 2001, page 78). Before the ground froze in December, landscape contractor Roger Cook had installed the wood privacy fence and both patios—one for homeowners Dan and Heather Bolvers

## Firmly Planted

and one for their tenants—and planted some large flora, such as the honey locust and golden-cypress trees (the latter appears in the left-of-phone) along the rear retaining wall. But work on a concrete paver walkway from the gate to the rental unit's patio hadn't yet begun, and low hardy runs and shrubs were still needed to fill out the planned areas. "The boxes were there," Roger says. "But we weren't able to put on the party dress."

Roger returned in March to lay the walkway, but he had to wait until early May—after the ground thawed and tender plants would no longer be at risk—to put in large paw and holly trees underneath the steel staircase, where they form a natural screen between the patios, white rhododendrons (above center) inside the retaining wall, and white 'Sweet Autumn' clematis and purple fiscalia shrubs vines to adorn the fence and the base of the stairs. Dan put on the finishing touches later that month by planting and mulching companions and perennials for colorful ground cover along the fence. Just in time! Not long after the space was finished, it debuted before an enthusiastic public when Gardens for Charlestown included it on their third annual garden tour.

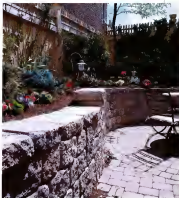


PHOTO: JAMES HARRISON

## in pursuit of passion in the kitchen

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# OUTTAKES

## Rescue Efforts

The OLF House stands at odds in the decade-old preservation movement with a number of nonprofit groups, including the National Trust for Historic Preservation, which seeks to protect threatened architectural and historical landmarks. To those structures on jeopardized sites across the country, the trust has for the past 14 years created an inventory of America's 11 Most Endangered Places. The places are perilous—whether due to neglect, encroaching urban sprawl, or thoughtless public policy—include everything from historic homes to modern commercial buildings, city neighborhoods, and even land tracts.

"Our role is to help people realize the diversity, richness, and legacy of America's heritage," says Douglas Young, a trust spokesman.

The year's list (right) includes sites ranging from a dilapidated 1940s Italianate row house where Carter G. Woodson, the father of the black history movement, once resided to Colorado's 110-year-old Verde Valley House, currently threatened by run-down urban development. "O H best home! Thomas appreciates the creation of the center. "Once a house building or landscape is destroyed a certain loss is sustained," he says. "So their efforts are critical."

Of the more than 125 sites designated since 1996, only one has been lost entirely. The 1947 Skyles House (1996 list) in Reno, Nevada, has been used as preparation for future development. The fate of many famous structures remains in limbo, but success stories include Rhode Island's Southeast Light (1990 and 1996 list), which the local community rescued from an eroding cliff in 1991, and New Mexico's Macmurtrei Castle (1997 list), now undergoing a \$30 million restoration with plans to reopen the full as an international study center.

For more information and to view photos of some of this year's list, visit [www.natshouse.org/11most](http://www.natshouse.org/11most).

## 11 MOST ENDANGERED HISTORIC PLACES FOR 2001

1. **OSMA Campus, Bloomfield, Conn.** This beautifully landscaped example of 1930s office architecture is set to be demolished.

2. **Historic Jackson Ward, Richmond, Va.** "The Harlem of the South," this district has already fallen prey to insensitive development.

3. **Miller-Purcell Site, Grant County, Ind.** This charming 18th-century French-born is emblematic of the Newland.

4. **Seller's Valley Road, Colo.** Aquatic stringers landscape, it is being marked by rampant construction for the tourist trade.

5. **Bahai Temple, Meriville, Calif.** The site—once and last designated—1880 site was constructed by Chinese immigrants.

6. **Carter G. Woodson House, Wash., D.C.** This abandoned 1930s Italianate row house is in need of historic renovation.

7. **Historic American-made theaters, nationally.** Made obsolete by multiplexes, thousands of movie theaters stand neglected.

8. **Los Encinos del Rio, Lower Rio Grande Valley, Tex.** Poorly planned growth is poised to destroy the character of a 200-mile stretch of forest key to Mexican-American history.

9. **Pearl Harbor's Ford Island, Honolulu, Hawaii.** Historic military structures near Ewing's Point are threatened by development.

10. **Prime churches of North Dakota.** More than 400 historic churches in various styles are dying due to lack of maintenance.

11. **Stevenson Creek Settlements, Lincoln, Neb.** A proposed highway would cut through this cluster of heritage farms.



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## Demo Helper

When TQW general contractor Tom Silva needed to take down a wall of the new project house in Manchester, Massachusetts, demolition contractor Bob Dagland lent him his weekend's time to do the job. Adams date back to the Bronze Age, when they were developed as carpenter's tools for training and shaping timber. A woodworker would wrap the tool low, like a peeler, along the length of a tree trunk laid horizontally, and the curved, interlocking blades, set perpendicular to the handle, would chip away at the wood. Though with the advent of power tools the carpenter's adze has largely fallen out of favor, woodworkers still find this way to the job site for tree-down purposes. The head of a weekend's adze, like that of its woodworking cousins, has a squared back to accept the blows of a double hammer, and drive it deeper under floorboards. But it was this adze's narrow, straight, 14-inch notched blade (long for an adze) that Tom found most advantageous. "Wedged behind into a step-wall, the long nose makes more contact with the framing member, making it a better fulcrum," he says. "Plus, the yard-long handle puts more space between me and the job, which means more power and leverage." These features help speed and ease a demolition job. As Tom explains, "Going it with a hammer and a crowbar would be a lot faster."



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# HOUSE CALLS WITH STEVE



## Personality Change

An outmoded kitchen gets a remodel that's in sync with the house's style



**T**he Montclair, New Jersey, red estate listing was calculated to seduce "1920s English-style Tudors, no price limit. 4 1/2 bds., 5 1/2 baths, Kitchens 11' long and 10' wide, and just 10' from the main entrance. The couple, both from the area, had been looking for just such a house, a place where they could raise a family. Like many homes, though, this one had the look behind a hulk of hype. The wares, across kitchen, which had been designed and fitted out by General Electric in the 1930s, did not completely do justice to the modern efficiency that America's women craved—look close. In addition, "everything, including the apple core, was painted white," says Karen, who loves to cook. Though the Wagner's great-grandson, the wife, was "wowed up the room's retro, kitschy charm," they soon abandoned the idea. For one thing, Karen found out the new prospect with paint and stained the end just would need a larger space in which to prepare and eat meals with their kids. For another, the "50s elements in the kitchen clashed with the Tudor details in the rest of the house."



The blue metal subway tiles, the walls were covered with tile patterned paper, the ceiling was dropped and painted white, and the flooring was formal speckled linoleum. As a final flourish, there was linoleum tile mosaic on the wall opposite the cabinets and sink, where a cocky dove on a wall inspired "It was a personal piece," says The Old House host Steve Thomas, "but not much more."

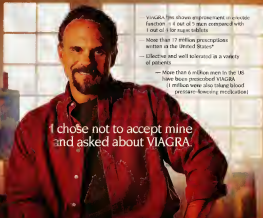
### PROBLEM

"The major obstacle in a redesign was structural, not cosmetic," Montclair designer Sally Katz says. Across from the stove, G.E. had run a chase to carry wiring and pipes, creating a niche for the

The 1930s kitchen (center, left) was a dated showpiece. After unsuccessfully trying to sell the cabinets to a film company, the Wagners gave them to Karen's dad, who was then in the stage in their own play. (left, right) With an essential door cutaway and open shelving, the updated room felt more stylishly in tune with the 1920s house.

PHOTOGRAPHS BY GEORGE ROSS

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# ASK NORM

Tips for unsticking windows, removing soot stains, and choosing a shop floor

## FLASHING BLEED

Our house is fairly new, with painted cedar siding. Unfortunately, the copper flashing above our window seams is leaving the paint on the adjacent clapboards a brown color. What can we do? We're tired of repainting the area.  
—Marianne, Galesburg, Conn.

For years it was thought that cedar and redwood contain natural preservatives that dissuaded copper where in direct contact with metal. Recent studies from the Copper Development Association and the Western Red Cedar Lumber Association dispute this long-held belief. According to David Hane, manager of architectural services at Arctic Copper Products, oxidation is the likely source of your problem. When airborne pollutants such as sulphur dioxide combine with moisture, they produce weak acids that dissolve the copper oxides on the surface of your flashing. The stains you see are the result of this brown dribbling over your siding. Because these stains will be non-removable on light colors,



discoloration of the house often underlines. The office would be accessible through an existing door in the basement. Our builders, however, said he doesn't know much of the construction. What do you think?

—Joe and Karen Kozak, Missa, Pa.

I'm afraid I side with your builder. A screened porch is perfectly sane in the climate, so water will mostly find its way through the floor to whatever you build beneath it. With that in mind, the only hope of keeping water out of the office would be to first build a sloped "roof" before framing the porch floor above, and you'll have to cover that roof with an absolutely moisture-free material—and I don't know of any—because the porch floor will prevent you from making repairs.

If you want a really nice sun space and a serviceable, low-maintenance office underneath, make a fully enclosed, three-season porch with screened roof doors that can be closed up in inclement weather.

## REWIRING IN STAGES

The electrical wiring in my house is very old, and I plan to have the entire house rewired. However, due to financial constraints, I'm thinking about having one room done at a time, so I can spread the work over a longer period. Does this make sense?

—Linda Warren, St. Louis

I understand your reasoning, but doing one room at a time will, in the long run, cost more than making one wiring through the walls of a room. It should be a lot less disruptive to you, and safer than



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**ASK NORM**

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**EXTERIOR DOCKET DOOR?**

I'm installing my kitchen and would like to have a pocket door between the kitchen and an attached 4-car garage. The space is not always heated, so this will have to be some sort of weather-stripped door, but I can't find such a thing anywhere. Does anybody make them? If not, maybe I could make a composite sliding glass door, and cover the fixed side with plywood and drywall. Can you think of any reason why this wouldn't work?

Gerrard Swenson, Leesport, Pa.

There's good reason that you don't find pocket doors for the exterior of a house. They would be horrendously difficult, if not impossible, to weatherstrip and insulate. Now, as to your idea for having a sliding glass door into a pocket door, there are several reasons why this is a bad idea. First, you wouldn't be able to properly support the plywood and drywall on the fixed side of the glass door—you'd end up with a surface that would be a mess. Second, the perimeter of the wall would be cold in the winter because it wouldn't be insulated as well as the rest of the wall. Third, with no access to the fixed portion, the door would be a nightmare to service. Fourth, covering the exterior of the fixed door with siding to match the existing siding would be a headache.

The fix either solution would be to install a pair of counterweight interior-grade French doors in a fully glazed counterweight passage door between the two rooms. This might take up some valuable floor space, but at least you'd end up with a weather-tight, weather-resistant passageway.

**PUTTING DORMERS**

My wife and I purchased a registered early '70s ranch house with a lot of potential. One of the main projects I have in mind is to change the roof lines of the house, perhaps by adding a pair of dormers. Is it possible to perpendicularize the dormers and just lay them on the roof to

install them, rather than go through the normal "stick built" process?

Robert Edwards, Roseville, Calif.

The roof pitch on most ranch houses is too shallow to allow dormers. But even if you did have the pitch to make it work, you can't just throw a dormer up on the roof and call it a day. You'll have to add structural supports to the roof framing for the dormer's extra weight, and you'll have to strip off a lot of roof shingles to expose the new ones under the dormer's rafters. As for putting a dormer on a dormer, unless you're doing a major renovation on the ground, you'd need a crane to get it to the roof, and you'd have to overbuild it to withstand the storm. I've personally professionalized dormers by building the walls and ceiling all the rafters on the ground, but it called for a lot of planning and precise cutting. I think you should stick to having the dormers in place on a solid wooden frame.

**SOOTY STONE**

The stone above the opening of my fireplace is black from soot. I have tried to scrub it with soap, water, and acid brush, but with no success. What would you suggest?

Chris Morris, Boston, Texas

One approach to removing soot from stone is to dissolve a half to a full cup of trisodium phosphate (TSP) in water in a gallon of hot water and then scrub the area with a stiff-bristled brush. This is messy work, so protect nearby surfaces from the strong solution as well as from the sooty rinse water. Also, wear rubber gloves and protect your eyes with goggles.

If you haven't already tried cleaning it all, you might have had some success with a laser-surface stone cleaning sponge. It's used without water to make soot release instantly. You can still give the sponge a try, but if neither it nor the TSP works to your satisfaction, the problem may be serious and soot, and then it's time to call in a professional, who will probably use a concrete-etching cleaner or masonry seal to remove the soot.

**FEEDING PLYWOOD**

It's nothing if difficult to locate good, flat plywood for use in my shelving and cabinet projects. Home centers and even big box lumberyards seem to stock it so poorly that I usually have to go through 20 or 30 sheets to

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## ASK NORM

find out there's even better ways to do it. Do you have any suggestions for taking out the water?

Steve Thomas, Bloomer, N.J.

When you lay a stone plywood for making a sub-deck—and I assume you're not using construction-grade CDX plywood, the kind meant for house sheathing—it should be open or less flat. But even a panel that's slightly out-of-level will be less after you cut it into smaller pieces and assemble them. It's merely wood; it's not much you can do about expanding and contracting.

Just plywood is what I use more for sub-decking, and I generally buy it directly from a plywood distributor, not from a retail store. I get better quality, a wider selection of products, and higher grades. If there aren't any such outlets nearby, there's a good chance that your local lumberyard can special order what you need, the price might be a little more, but it's directly to your shop, saving you from having to pick it up. Once the stone arrives, you can get away with tracking them on edge, as long as you're going to use them soon. I try to buy only as much as I'll need for a particular project. That way it's not sitting around the shop, waiting for an excuse to warp.

### DOG-PROOFING A WOOD FLOOR

Our house has half-laminate carpeting, but we would like to replace it with solid wood or engineered wood flooring. We have three dogs, though, and we're concerned about scratches and gouges of the floor. Should we risk with carpet?

John Taylor, Plymouth, Va.

No matter what finish you have on any wood floor, engineered or solid, dogs will eventually scratch it. But if the wall-to-wall carpeting isn't going, you can take some simple steps to minimize the inevitable damage. Put down area rugs or carpet runners, particularly in hallway areas where traffic is channeled along a narrow path, keep the dogs' nails closely clipped, and don't roughhouse with them outside—go outdoors for playtime. Nothing scratches a wood floor faster than a dog's scratching for a chew toy you've thrown. I grew up in a house that had wood, varnished hardwood floors, and our dog had to stay off them.

Of course, scratched finishes can be removed. If you have wood floors as much as you love your dogs, you'll just have to refresh them more often than those folks with granite do.

### BUSTICKING WINDOWS

We live in a 1918 Dutch Colonial. On the front of the house, there are fixed-position chestnut-glass panels above double hung windows that shut open but have oil-bar painted shut. It is not as free these without damaging the chestnut paint? Also, we'll need some way of keeping them open, the chestnut might be damaged when the house was painted with spray-on seal looks like. To complicate the situation, the chestnut glass is sagging, though it doesn't seem to be losing a strand of oil.

Nancy Brown Gossamer, New York

Have someone else cut to take a look at your stained glass. That's not a subject I know a lot about, so I'll defer to local experts. But I have done more than my share of window work over the years, so here's what I recommend. First of all, there's a good chance your windows are covered with layers of lead paint. (A home lead test will be able to identify the toxic metal.) If your windows are lead-free, stop at the next paragraph. If not, you need to take extra precautions to protect your self and your family from the lead dust and chips that this work will create. Tape a heavy plastic sheet to the floor where you're working, wear a respirator and a disposable Tyvek suit, and lay out some vacuum with a HEPA filter. (Lead dust can pass right through a regular vac and be blown around the house.) Once the safety gear is in place, use the lowest sand with a damp rag.

Now grab a utility knife with a fresh blade and score the paint's bond at the sides and bottom of the sash, and at the opening rail where the upper and lower sash overlap. Don't bother with the rest of the upper sash—getting it to open is probably more trouble than it's worth. Then gently work a thin, flexible 1/2 inch wide putty knife between the sash in broken places up, and cross the window upward as best as you can. You may have to work on the seams outside as well. If that doesn't loosen up the windows, take off the whole sash that holds the sash in place. Again, you'll just have to

cut through the joint between each sash and the casing. Sashes are sometimes screwed into place, but if they're nailed, use a thin pry bar or a stiff putty knife to remove them. Once the sash is off, you should be able to free the sub.

You can then sand or scrape away any excess paint, unless it has lead. In that case, do yourself and future generations a favor and use a safe chemical stripper to take the sash down to bare wood. This is also a good time to renew the glazing putty holding the glass in place (see "Putting Perfect," September/October 1998, page 63). Then, before replacing the sash, spray the joints where the sash sits with a non-oil-based dry lubricant, like Teflon or silicone, as rub them with the sash of a rattle.

Because the weights are out of commission, you can prop open the sash with a stick. If you want a more sophisticated solution, get an assistant on having jamb liners installed. These plastic pieces attach to the jamb on each side of the window and provide a friction fit against the sash so it will stay open where you leave it. This isn't a job for a homeowner, though; the sides of the sash will have to be trimmed slightly to accommodate the liners' thickness.

### BRICK WALK WOBBS

After we decided to put a walkway through the backyard, we went to a brickyard and purchased sidewalk that already contained brick in its base. We excavated the walk area, leveled the ground, and laid the brick over several inches of sand. When set in and the bricks began to disintegrate, some of them crumbled and finally fell apart. What did we do wrong?

George Lee-More, Denver, Colo.

You probably already passed this. You bought the wrong brick. It's not what you have in a cold hard brick, which is fine for building walls but is too porous to use as a walkway surface where components dig below freezing. What you need is a hard-frost paver brick, which won't absorb moisture from the ground as fast as a soft brick will.

The best replacement for the old brick would be pavers rated SW for severe weathering. The designation isn't stamped in the material, however, so get your next batch from a supplier who knows his stock, and be sure he knows what you'll use it for. I know this is discouraging, but look on the bright side: You've already done the digging.

## ASK NORM



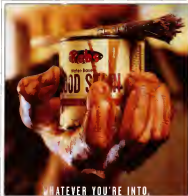
Get solid finish of red frame (shown) on window sashes.

### TOP CHOICE FOR SHOP FLOORS

I built a large shop for myself and covered the floor with 2x6 tongue-and-groove plank multi-plies and 5-inch plywood. I wanted a wood floor because I have extreme and thought something would be better on my joints. But what would I build as the permanent floor? It has to be sturdy and attractive.

Don Lutz, Portland, Ore.

Wood is certainly much more forgiving than concrete, but unless you get a really good deal on oak, I think you'll find that leaving plywood as the finish floor has lots of functional downsides. You can screw



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## Gardens Under Glass

Plants flourish in a climate-controlled habitat

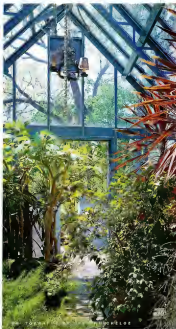
BY FRANCESCA LYMAN

**A**ll summer long, a dazzling array of potted plants green-verdant to the hilt. New Jersey, house belonging to Greene Healy. As the weather turns cold and plants go dormant, this passionate grower can continue to luxuriate in his flora because he transfers them into a greenhouse. Here he shelves such delicate imported specimens as New Zealand flax, and dozens of other container plants, like cordylines, amaryllis, and angel's trumpet, that would perish outdoors once temperatures areble. "No matter what the weather, it feels like paradise around here," Greene says.

By having built a greenhouse, Greene is carrying on a tradition that dates back to the 16th century. According to *May Woods and Anne Werner*, authors of *Glass Houses*, status-seeking European aristocrats made an art out of wintering prized citrus trees as "orangutans," whose high, arched windows captured the sun's light and in heat, which was supplemented by woodstoves.

One doesn't have to be in the major leagues, of course, to delight in a glass house. Indeed, over 4,000 greenhouses, in a variety of price points, are built in the United States each year, estimates Charley Gray, of Charley's Greenhouses and Gardens, in Mount Vernon, Washington, whose web site of greenhouses and accessories lists such as birch, fern, and bamboo have doubled over the last two years. In addition to do-it-yourself, custom-built models (which can set their owners back hundreds of thousands of dollars), do-it-yourself greenhouses can be purchased for as little as a chilly \$180 via mail order.

Planting a glass house requires forethought, predicted



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on the kind of plants you want to grow and whether you plan to use the space year-round. The bubble is dictated by the species you intend will affect the building's use, orientation to the sun, and heating (plus cooling in a hot locale) and humidifying features, all will affect the price. "A successful greenhouse can be compared to an ecosystem with its own microclimate, in which everything is maintained in the right balance to sustain all the forms of life within," says Jacek Marawski, director of publishing at the Brooklyn Botanic Garden and author of numerous books on ecological home and garden design.

There are three basic habitats to choose from: the "cool," with temperatures kept between 50 degrees at night and 70 degrees by day, preferred by plants such as cactuses and cyclamen; and the more common "intermediate," such as Greene's, which runs the nighttime low to a more moderate 53 degrees and daytime temps into the 70s, requiring supplementary warmth from a space heater or built-in system in northern areas when the weather turns frosty. With that extra heat, most annuals and some perennial plants that must be protected during the winter, such as succulents, bromeliads, and some species of orchids, should be happy in either environment. The third type, "tropical," sustains temperatures—65 to 70 degrees year-round by



The greenhouse was designed to echo the form of the guest house it is attached to. Built half-underground, it protects the interior from sunbaths and provides a backdrop for outdoor plants.

#### HIGH-TECH CONTROLS

**HEATING** Although initial installation is expensive, radiant heat (heated) is a more efficient alternative to space heaters. It's also much better for the plants because it "gives them a warm, consistent environment by heating the soil evenly from beneath—rather than blasting plants with heat air from the above," says Bob Rosen, greenhouse manufacturer and accessory supplier. Hydraulic or electric floor systems can cost up to \$25,000. Or just install a complete radiant heating system (connected to the underside of the bubble), which includes tubing, a pump, and a thermostat, attached to an existing water heater. Outfitting two or three benches will run \$500 to \$2,000, depending on the total square footage.

**IRRIGATION** "Homeowners are always excited about their greenhouses until they discover the work involved in watering," says Rosen. When equipped with a standard irrigation system, a drip system (as on top of the soil and roots in [and plant roots] directly without overwatering to common pitfall of watering

with a garden hose), via polyethylene drip lines, which feature preinstalled in-line emitters or custom-punched holes with external emitters. A homeowner-installed system can be purchased for as little as \$500—a bargain, Rosen believes.

**MOISTURE BALANCE** "Foggers are the most thorough way to humidify and cool the air," says Rosen. "They don't wet everything in their path, unlike misters, which can create unwanted infection." By releasing water at a rate of 1,600 psi (irrigation system run between 30 and 60 psi), high-pressure foggers need run only a few seconds to sufficiently subside the air, allowing the temperature to stabilize. Costs for stainless steel or copper fog-dilution pipes, coupled with installation around the inside perimeter of a greenhouse, total between \$10,000 and \$20,000.

**AIRFLOW** Although roof and window vents are standard in every greenhouse, supplement them by adding motor power and wiring them to a thermostat. "In my opinion I'm a connoisseur of wind and rain," says Paul Zee, owner of Amelco Greenhouses. Motors designed to power the opening and closing of roof vents begin at around \$400, those for windows just slightly less.

**SHADES** Electric shades are the most advanced way to "take the edge off of the sun," says Rosen, noting that "the more confined the space, the faster the air heats up and turns sticky," increasing chances for disease and heat stress. Shades also help retain heat on cold winter nights. Prices run from \$300 for vinyl to \$4,000 for customized window. —Murray Linderman

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## On the Same Wavelength

A home computer network means there's no waiting in line to get online

BY IAN AUSTEN



S

oon after Jeff Herbin signed up with his cable company to have a high-speed Internet connection at his Silicon Valley home, an unexpected problem developed—not technical, but marital. “We both had our own computers, but my wife and I started to fight over who could go online,” Herbin recalls. They could have resolved the dispute by getting a second cable modem, but at \$40 a month plus installation, this wasn’t an appealing alternative. So Herbin ended the bickering by installing a network that lets their two computers simply tag

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For networks that use wires to handle the data transmission, high-speed Cat 5 cable (1) is the current gold standard for home and office. Fast compared to cables (2, 3) and other transmission cables within a single PVC jacket, saving on installation costs. The real cable connection that Cat 5 uses (for the network) and has divided RG-6 coaxial cables for cable and satellite television. The average "jacket-proof" cable contains Cat 3 and RG-6 wires, as well as a fiber-optic line, the fastest available transmission medium. As promised, however, there is no practical way for home users to use fiber optics, which explains why even a fancy network switch (4) has only one for an on and Cat 5. A wired network requires a home gateway (5) to be plugged into each of the ports so that computers can swap files and share peripheral devices. But in the wireless network domain (6, 7), which most data is sent via radio transmission. All it takes for a computer or any other device to be part of a network is to slide a network card (8) into the appropriate port.

as a new Internet connection through a box called a home gateway. He can check the early reading of his stock portfolio on a laptop laptop computer at the same time the catching up on his e-mail download on his desktop. Also only a few weeks with his system, Heister, executive vice president at a software firm, because a networking enthusiast. "The technology is really going to change people's lives," he says.

Heister is not alone in this thinking. The growing number of high-speed Internet connections provided by DSL and cable modems has been driving the demand for residential networks that the advantages of networking go beyond allowing several household computers to try out one costly home network. Once a home is a network, kids can spare off as a virtual herd between two computers. Instant messages between PCs in different parts of the house can replace shouting up the hallway. And expensive peripherals, such as photo-quality color printers, become accessible to every computer in the house. In the long run,

#### SECURING THE AREA

With any computer connected to the Internet, there's always a chance that a hacker or virus can find a way in. And when that computer is subscribed to others in the house, they all become vulnerable. Many recent home gateways include much of this concern by installing firewall software that acts as an electronic sentry between the local network and the Internet to prevent outsiders from stealing your credit card number or accessing personal information, and to stop viruses from crashing files and eating up memory.

Wireless networks are more difficult to protect because the electronic shield between devices can be easily intercepted with a simple antenna up to 100 feet away. But interference is not the same as intrusion, says Greg Anselmi, the senior director of product development at Apple Computer. Because such network cards are connected with a unique address and because the signal it sends can't be intercepted, he says, electronic eavesdroppers can't spy on your e-mail or take control of your computer, even if they were to plug up that signal. Anselmi acknowledges that a determined and sophisticated hacker might be able to overcome these protections, but he says the odds are in favor of any firewall in a wired network.

DSL, wireless home-network pioneer Jeff Heister admits that he's slightly uneasy about the ability of outsiders to plug his network's transmissions from the air. He's glad to reduce that risk by adding passwords to both of his computers. And he keeps sensitive data encrypted about family finances off the air entirely by storing it on a file-sharing computer. It's linked to his network gateway by wire, rather than through radio waves.



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a network will likely become the house's central nervous system, monitoring and controlling everything from lighting, security, and HVAC systems to such seemingly low-tech items as refrigerators, kitchen ranges, and washing machines (see "Working in Context," May 2001, page 40).

Third, naturally, computer networks would solidify the prevalence of the business world's chief affliction, badle customer-to-buy all the software and the different pieces of it, to be used to acquire information from the Internet, convert it to a format that a personal computer can understand, guard the appropriate pieces of data out to each networked device (primarily, external hard drives, and other peripherals), and flow the smooth, uninterrupted flow of digital information between these devices back to the Internet. And only a business could afford to do the infrastructure needed to set up, troubleshoot, maintain, and constantly service such sparsely located electronic relationships.

<p> Luckily for homeowners, the key components of a computer network are now being packaged into easy, snap-together kits costing as little as \$100. They can handle all the routing demands of an office network without the need for a network designer or a closet big enough to hold all the hardware.</p> <p> You just plug the DSL or cable modem line into one port on the gateway, which handles all the complicated routing functions, and plug each computer or peripheral into its own separate port. Some designs even incorporate the DSL or cable modem, eliminating one more gadget from the clutter that surrounds computers these days.</p> <p> The snap-together software provided with the network kit pretty much takes care of the rest. Of course, like nearly every other networking computer, these kits don't always live up to their plug-and-play promises, but most can come with trouble-shooting programs that enable even the most technophobic user to solve most configuration problems.</p>	<p>Residential network 4.2</p> <p>Residential home network 16</p> <p>Residential network kit home 2</p> <p>Average networked device in each home 4</p> <p>—Allpoint</p>
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## EASING THE PATHWAY

For years, networking firms have been trying to figure it all out: Is plug-in a computer or a network device? Is it a standard electrical outlet, and how does the existing network of electrical wires in a home fit in as well as to power light bulbs and hair dryers. But so far, the only real answer that exists is to create a new plug-and-play system with problems and solutions similar to those of old-fashioned data communications.

The HomePlug Powerline Alliance—a group of companies including Cisco Systems, 3Com, Intel, and Panasonic—is developing new technical standards for plugging digital data into a wire-

Before purchasing a network card, you need to decide how many computers you want to connect and how all the devices will be linked together. There are at least three different options to choose from: conversion of phone lines, high-speed Category 5 ("Cat 5") wire, and wireless radio transmissions.

Wireless kits offer the ultimate in networking flexibility because they eliminate cables altogether. As long as one computer is hooked up and hardwired to the Internet, any computer that is within 130 feet of the base transceiver can transfer data at speeds up to 11 Mbps (megabits per second). Installation is simply a matter of plugging the gear, way more so for the receiver, plugging in 302.11 network card—no credit card-sized network adapters—into the appropriate slot of any unattended device (like the PCMCIA slot in a PC, the AirPort slot on a Mac), and loading the software.

While the brain-based wireless quantum may be easy to see, they face other limitations. For instance, while optical wires can easily pass through wood and glass, they bounce off metal objects, including large apples and even metal rods. "Metal is probably a radio signal's biggest enemy," says Greg Kozlovich, the senior director of portable product marketing at Agilent, which makes the wireless AirPort gateway. Microwave events and collisions infrequently operating at the same frequency as 902.15 megahertz can also interrupt the signal and temporarily shut down the connection. To maintain these problems, most kits allow adjustment of the system's frequency to eliminate interference from other antennas.

When computers share information in a network, a word network makes the most sense. The easiest system to install are those that use the wires already embedded in the floor. In this case, there are likely to be gateways on the floor through ordinary electrical wires just "laid below." At this time, however, the only way to make a circuit is through conventional relays.

### Network Numbers

U.S. homes  
with personal computers  
50 million

U.S. homes with more than one computer: 34 million

U.S. homes  
likely to have more than one  
computer by 2003  
31 million

Residences with a  
home network in 1998  
200,000

Residences with a home network in 2000:  
**4.2 million**

**Residences likely to have home network by 2004**  
9.8 million

Average number of networked devices in a school home in 2000

Average number of networked devices likely to be in each home by 2004

---Reported by Anne K. Kubitling

By the end of this year, there are likely to be gamers on the market that work through ordinary electrical wires (no "Ethernet," below). At this time, however, the only way to piggyback onto existing cabling is through conventional riser electrical wiring while maintaining reliable speeds of up to 14 Mbps and complete compatibility between Compaq's and other vendors. It's all wires, but, according to Alberto Montanari, the president of Hasegawa, field trials of systems using the new standard demonstrate that it is possible to push data and broadcast current through the same copper wires. Consumers won't be able to find out for themselves how well these systems work until the end of the year, at the earliest, when the first network products based on IEEE1394 standards hit the stores.



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TECHNOLOGY

phone wiring. As long as the wires have  
been properly installed and haven't disor-  
dered with age, it's just a matter of plug-  
ging each device into a phone jack and  
installing the necessary software.

Standard telephone  
wires can handle cur-  
rent high-speed inter-  
net traffic just fine, but  
with access speeds  
steadily increasing, at  
18-Mbps transmission  
capacity (the same as  
wired systems) is all  
but certain to become  
a digital backbone.  
Electrical engineer  
Allen Gallen, who's  
worked on several  
The Old House proj-  
ects, no longer recalls  
this was when he's working on new homes  
and addresses, even if his customers plan  
to use the lines only to make telephone  
calls. Instead, he spec's Category 5  
enhanced cable, a stepped-up telephone  
wire that can simultaneously handle up to  
100 Mbps of high-speed data.

Cat 3 is easily four times as expensive  
as everyday telephone wire, but that  
amounts to a mere 13 cents per foot—a  
bargain considering the transmission speeds  
it offers. And it has to be handled with care.  
Pulling the wires too hard, bending them  
too sharply, or shoving them through too  
tight an opening can alter the way they most  
transmit their plastic jacket, and wiring per-  
formance. "You don't have to cut them  
like eggs," Gallen says, "but you do have  
to use some common sense. To put it sim-  
ply, don't force it." Shockers are also out.  
Each computer jack, which looks like a  
phone jack, needs its own separate cable  
run from the central gateway; it can't have  
any splices along the way. Not can Cat 5  
cable share alongside discolored wires. The  
electromagnetic fields that the wires gen-  
erate when in use can interfere with the ad-  
justable metal digital signals in the cable.  
Keeping the two lines at least a foot apart  
prevents against such interference.

While many people turn to provider Gal-  
len to install the network's wiring, others  
do the job themselves. Mark Caruso, a  
director at Levant Integrated Networks,  
lived the cableless life in the crowd space

around his home in Redmond, Washington,  
to lay the wiring for his own Cat 5 network.  
As insurance for the future, he doubled each  
run of Cat 5 cable and put in parallel runs  
of coaxial cable for TV and satellite recep-  
ting and fiber-optic  
cable. Fiber-optic lines,  
which carry light-based  
data through strands  
of glass or plastic  
rather than a metal  
core, are the fastest—  
and at 30 cents a foot,  
the most expensive—  
transmission media yet  
developed, one strand  
alone could handle all  
the phone calls in the  
United States at any  
given time.

Caruso's fiber-  
optic lines at home, however, he hasn't  
purchased the needed conversion equipment  
(at \$300 to \$1,000 per connected device)  
needed to change electrical impulses into  
photons, or hired a \$100-per-hour fiber-  
optic specialist to spend an hour or two  
making the connections at each jack. Still,  
because it's the labor, not the cost of cable,  
that is the main expense in any wiring job,  
Caruso says a million more to buy the  
latest in cable technology to insure  
against future obsolescence. "I don't want  
to have to go back again and do better in the  
long run of the system," he says.

Herbst avoided any spidery online dis-  
patches by choosing a wireless gateway  
device for his home network. By plugging  
a wireless network card into his laptop, he  
can surf the Web while roaming the house  
or yard. The total cost: about \$400. Herbst  
has found that the appliances in his kitchen  
run that room into a dead zone for the  
new system, but even with the interference  
problem, Herbst's network has begun, as  
he predicted, to change the way he lives.

Allen Herbst, for instance, he takes care  
of business sitting cross-legged on his  
couch, free from the distractions of the  
office. "Since I've looked up, my col-  
leagues at the office haven't seen me as  
much in the morning," he says. "I like the  
freedom of being connected virtually any-  
where in the house, in just case of it."  
Not to mention the peace that networking  
has brought to his domestic life. ■

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devices are  
projected to be a  
multibillion-dollar  
industry as early  
as 2004."

—JOHN WOODFORD,  
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In 1973, when gourmet cooking powder pest borates began burning out of window and door trim in more than 1,000 homes near Mobile, Alabama, the building manufacturer used the wood auger for \$2 million. In a depression for the first, U.S. Forest Service researcher Lennie Williams, a leading expert on the subject of wood-rotting beetles and wood preservation, revealed that the borates used had been altered before it left the Amazon. In his research, Williams had heard that builders in New Zealand and Australia had been successfully treating some-older wood with borates, the cheap, environmentally safe mineral compounds that had been used in the United States as deodorizers and cleaning agents in borate laundry powders. Because of the trial, Williams began work to introduce this preservative

BY JEANNE RUER PHOTOGRAPH BY ERIK BANE

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### BORATES IN THE RAW

Borates consist of boron, the fifth element on the periodic table, and oxygen, along with sodium, in its sodium form, are part of other minerals. These are found mainly as natural borates and potassium borates and sodium borates are found either as crystallized forms (1) or are extracted from natural deposits in dry desert lake beds around the world. Another borate can be mixed with boron and sodium to create a borate and potassium in form of a borate (2) that can be used in a variety of ways. A borate can also be used in a powder (3) which can be mixed with other physicals to create a preservative liquid (4). One gallon of concentrated physical borate will treat roughly 150 eight-foot logs.

alternates into the country's wood manufacturing industry.

Twenty-eight years later, additional research by Williams and other scientists shows that borates can effectively deter many of wood's natural enemies, including powder post beetles, house borers, cutworms, termites, fungi, mold, even fire. Not to mention, including house pest and bacteria, it is also as toxic as table salt.

To keep decay or insects that have already begun to do damage,

builders and homeowners can apply borates to existing wood. To prevent infestation or decay, they can buy materials—everything from studs, sheathing, and siding to truss ties—with borate preservatives already built in. The U.S. Department of Housing and Urban Development accepts these materials as an alternative to chemical solutions when it meets with manufacturers and processors. And unlike pressure-treated lumber, which has a gradual loss from the residues of chromated copper arsenate (CCA), wood infused with borates doesn't change color, is safe to burn, and hasn't caused any environmental health concerns. "Nothing is one hundred percent safe," says Williams, now an independent consulting contractor. "But borate treatment is marginally safe. I think it can really help people."

The way borates kill termites and other wood-eating insects is by poisoning the microorganisms in the insects' digestive tracts that are needed to break down the wood's cellulose. In other words, a creature that can't breathe-treated wood eventually starves to death. For carpenter ants and other insects that burrow through wood instead of ingesting it, scientists believe that borates may also

poison the digestive tract when the insects manage to poison themselves. So far, studies have shown no ability to develop resistance to this type of attack. Borates also inhibit the wood-digesting enzymes excreted by the many different kinds of decay fungi, and they are a potent mildewicide. As an added benefit, borates act as a fire retardant by forming a glass that prevents wood from igniting.

The potential qualities of borates have been known for at least 300 years. Joseph Nye, a chemistry professor at Texas A&M University who spent 25 years studying 17th-century fireproofing in England, says the minerals may have been used in a borate solution to protect them from beetle larvae. Back then, the mineral arrived in Europe mostly by caravan from hot geothermal lakes in Tibet. Not until 1872 were borates

found in North America, where several large deposits were discovered in the United States—including a huge supply in California's Death Valley. Twenty million tons hauled it out, a fact celebrated on old homes of U.S. Forest land by powder. By the turn of the century, the substance was also being used for glazing ceramics and for treating ore. In addition, borates had become an effective preservative for cotton and other natural fibers.

As early as 1904, the U.S. Forest Service began looking at borates in general wood preservation. But when they discovered that insects merely crawled right through borate-infused studies stuck in the ground, they dropped the compound from further testing. "Borates aren't effective at ground contact because they're water soluble and leach out of wet wood," Williams says. Only later did researchers realize that one of the advantages of the min-

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in it is that it doesn't just stay where it's applied, but actually as green as and conservative as dating, ask again, precisely where it's applied and not hurt, are most likely to attack. As long as there is nothing to drive bacteria out of the wood—such as striking with heavy rain, or more dirt—the wood will be protected indefinitely. And because it disperses easily in damp soil, the compound cannot concentrate in levels that would be toxic to plant life.

Despite the fact that water can eventually wash borates away, it is possible to use wood treated with the substance to build outdoor decks or fences, even in wet climates. A strategy for slowing down or preventing leaching is to use paint or glaze as a bar-

rier, which will, backing up the remarkable cellulose fibers in boron compounds. They don't replace what they soak away—gradually over every three years.

Ladders, where leaching is not a issue, borates can be sprayed or brushed onto any type of wood in two forms. As a raw salt treatment that is mixed with water and covers the wood, or as a glycol concentrate that is applied straight from the bottle and penetrates into wood. According to Bryan Mandel, a historic preservation expert who has worked with borates since 1985 and now sells them, both borate products work well enough that one thorough coat—applied with a garden sprayer or paint brush—is usually sufficient to deter any insect.

Applying more, he says, is a waste of money. "If you kill a bug with a carpenter's hammer, a carpenter wouldn't kill it any faster." He is quick to point out that users should follow the detailed application instructions that come on every package.

Perhaps the hardest part of using borates is finding them. Louisiana Pacific distributes borate-treated decking products predominantly to lumberyards and home centers in the Pacific Northwest and Midwest, though not to as many as they'd like. "We're always looking to expand," says Steve Wiesting, director of marketing for Louisiana Pacific's specialty products. "But many lumber retailers simply aren't aware of the benefits of borate-based products."

A few companies—such as Wood Care Services in Washington (woodcare.com) and the Preservation Resource Group in Maryland (prgpc.com)—will ship out bulk orders to homeowners. But except for single post-control products such as powdered cork ranch bora, borates tend to be marketed primarily to post-control operators, big-home builders, historic preservation experts, and other specialty tradespeople. According to Wiesting, borate-treated building materials are kept in stock at only three retail lumberyards in the country, and in many others they're special-order items. "Bora products are slowly becoming more available in this country," says Wiesting. "But until there's a bigger awareness of what's out there, the demand will be limited." ■



Very powdered borate powder like this can be used on exterior walls. Builders can mix the powdered borate and spray it with water before forming the wall. Borate made from compressed carbon borates and borate acid work best outdoors where wood is in the ground or often wet.



over. One gel product is designed to be sprayed by sponge onto small holes that have been drilled into the affected wood, getting the borate underneath paint. Another product can be brushed onto the below-ground surface of a new fence post, which is wrapped with plastic and taped tight before being set in the ground.

A second strategy for using borates outdoors is to simply replace the preservative as it leaches out. The easiest way to do this, a practice commonly used by utility companies to extend the useful life span of their telephone poles, is to insert borate rods into holes drilled in the wood. These rods slowly dissolve whenever the

wood gets wet, backing up the remarkable cellulose fibers in boron compounds. They don't replace what they soak away—gradually over every three years.



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The built-in hutch and breadboard that serve the Cooks' 3 feet wide built-in breakfast nook. The hutch's upper glass-fronted cabinets, together, the lower solid wood base, and closed cabinets store dishes and large serving pieces.

## Cabinet Decision

A built-in hutch provides ample storage and a traditional look.

BY NANCY STEEDMAN

**T**he two goals set by Theresa and Christopher Cook for the reconstruction of the kitchen at their newly purchased 1941 Colonial-style house in Madison, New Jersey, were straightforward. Theresa, an accomplished cook, wanted to open up and combine the cramped work and pantry spaces that made up the antiquated layout, to make food preparation easier. And because she and Chris, an investment banker, love to entertain, they wanted the room to impart a "feeling of tradition and formality," as Theresa says, that would harmonize with the rest of the house. This being up to the standard of a friend, they turned to local architect Nick Bencley, from Morristown, who had modeled a number of houses in their area and was known to be especially sensitive to cabinetry and millwork—two hallmarks of the kind of elegant taste that they had in mind.

Theresa hoped to include an island for food prep and serving in the new layout, but even when the kitchen was widened to the max, finding enough space for one was a challenge. Bencley and contractor Chuck Buschell, of Whippany, New Jersey, devised a clever cabinetry solution that would allow for the island Therasa desired. By building in a hutch on the wall above the fridge and designing a 6 inches-diameter hole in the usual cabinet depth of 24 inches, they would gain the needed space for passage around a central work zone. Now Theresa has her 3-by-6-foot island, and a handsome 8-foot-wide cupboard that looks like the storage space it is meant to contain.

The hutch, or buffet, as it was called in 17th-century England, originated in Europe as a sideboard, or buffet. In colonial America, where the kitchen, or "kitchen room," functioned as both the cooking and social center of the home, this rugged, freestanding cupboard, made of a readily available wood such as pine, served a variety of purposes. Like White dressers and other European prototypes, it often featured open shelving on top and a two-door cabinet (and, occasionally, drawers) beneath, so that it could showcase and store a household's dinnerware and offer a convenient surface for serving food. With today's

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## MILK MADE



Theresa and Christopher Cook's hutch shows fine detail with the windows with beech found in King Tuft's book. Its color-point finish. The formula preferred in ancient Egypt is the same one cabinetmaker Chuck Buehler uses at *De New Jersey shop* he likes the way its matte finish adds an aged look to new furniture with a few easy strokes. Milk paint is made out of lime, clay, earth pigments, and, of course, milk proteins, which, as an bonding agent, helps the paint adhere securely to the wood. The mix comes in powder form, so which Buehler adds water until it's the consistency of oil-based paint, typically a 1-to-1-to-1 mix.

Buehler prepared the piece pieces with 100-grit sandpaper, then treated it with coats of *Lehigh's* *Quartz* with paint with a 2-inch China-bristle brush (1), allowing 24 hours of drying time after each application a second sanding with 200-grit paper to level, then a coat of vinyl acetate. Next, Buehler used a sponge brush to apply an oil-based black glazing liquid (2), which penetrates the wood's irregularities, enhancing the depth and tone of the finish to prevent the glass from overexposing the paint, he then applied it down with a cotton rag dipped in paint thinner (3). Since the glass doesn't dry to a hard finish, he protected it with another coat of vinyl acetate. Finally, after allowing the piece and sealant to each dry overnight, he applied a nonyellowing varnish (4) to protect against water spots and the AB and given spots that are visible in kitchen, especially one as busy as Theresa Cook's. —Dan Slichter

ward toward the rug laden cabinet meant the look of furniture, the hutch is making a comeback—as a built-in. Constructed by a cabinetmaker and attached to the wall, such a piece is more stable than its freestanding counterparts, which allows it to be built reflecting the needs to add or subtract other kitchen elements and then lend a sense of unity to a room, while adding variety and visual interest. Built on a base from space-saving, two-shelf models that closely resemble their freestanding counterparts, well systems like the popular and popular cabinet that's Theresa Cook's "jewel and joy."

Buehler designed Theresa's hutch in three bays, each backed with beadboard. The entire section, with closed cabinets above and below a single open-shelf unit, measures 42 inches wide by 87 high by 18 deep. Three side bays, lined with beech glass doors on top, on each 27 inches wide by 90 high and 12 inches deep. "The depth difference and the glass help offset the hutch's massive size and prevent it from overpowering the room," says Theresa.

The hutch was built as an independent unit—three upper and three lower—in Buehler's cabinet shop. One inch thick frame-and-panel doors, some accented with thin quarter-round moldings and others with beech glass, and drawer boxes built to principles of dovetail construction follow time-honored patterns. The interiors of the cabinets are equally well thought out. Shelves grouped down their length near the back edge wooden plates stand on end for display. To give the hutch an unique look, Buehler applied two coats of green milk paint (see "Milk Made," left), a finish popular in colonial times, then added depth to it with a black glaze on top. The effect achieves the hand-painted look of the piece itself. "With milk paint, you can see the brush strokes," as architect Buehler.

Once the units were ready, Buehler drove them to the site in his van, then screwed them to wall studs and to each other. Leveling and stabilizing the assembly required 16 adjustable feet on the base pieces. Buehler had them with beadboard molding and farmhouse feet, instead of web mounted toe-kicks.

The fine woodwork not only allows for plenty of storage and easy passage around the island but also nicely incorporated the look and feel of Theresa's culinary space. Now, she says, when party guests wander into the kitchen to see what's going on, "I don't mind anymore, because the room looks so good." ■

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## TALKING SHOP



**Carry On**  
BY CLAYTON DEKORR

The Log Cabin's Preferred Lidgy has a capacity of 200 pounds, which means three kids in the ensemble. Its 10-inch diameter wheels can traverse a rough or uneven ground as well as the back-floor steps. And because it measures only 190 inches wide, the cart can fit through standard doorways.

**E**veryone knows that a cart, wheelbarrow, or hand truck lightens the load and speeds the work of, say, moving fire-alarm bags from car trunk to shed, or hauled back as a gift tag. But for The Old House magazine producer Russ Morsath, such wheeled assistance is not just a helpful agency but a necessity. "Carts are crucial protection for both your property and your health," he says. He avoids damage to grass, floor—and back—with a push and a roll.

The most important attributes to consider before buying a cart are, indeed, a function of handle length and wheel placement. A cart with wheels too far forward puts more weight in the driver's hands and is more difficult to lift than one with wheels at the center of the load. Long handles on a wheelbarrow make it easier for a tall person to maneuver a heavy load, but will leave a shorter person struggling to lift it high enough. Given the subtle differences between models, Russ recommends a test drive before buying. "Load up the cart and wheel it around before you hit the checkout counter," he says. "As with a pair of shoes, you have to try it on first."



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## Holding Patterns

Examine your mortgage escrow account closely to be sure you're not over- or underpaying

U

Not a decade ago, Florida homeowners had little reason to be suspicious of SunTrust Mortgage Inc. The company had a 200-year-plus lending history and was a favorite in dozens of communities in the state. But despite the bank's stellar record, in the early 1990s something began to trouble SunTrust's customers: The escrow reflected on their monthly mortgage statement was making their payments painfully steep.

Almost every mortgage includes an escrow provision—a monthly amount homeowners are required to pay the bank as an advance on property taxes, homeowner's insurance, and sometimes flood and mortgage insurance as well. (This is different from the escrow arrangement made during the sale of a house, when the down payment and documents related to the home's sale are held by an escrow officer, a neutral third party.) Lenders generally calculate monthly escrow payments so that there's enough money in escrow to cover taxes and insurance for a couple of months. Apparently, SunTrust was padding these cushions, and other lenders were too—most likely in order to meet their criteria and improve their borrowing power. Some banks apparently faked the second inflation estimate on which tax and insurance projections were based so as much as 20 percent—or a time when the second inflation rate was only 3 percent. As a result, some customers were paying upwards of \$1,000

BY KAREN CHERNEY ILLUSTRATION BY P. J. LOEBNER



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a year more to accrue than were needed to pay their taxes and mortgage costs. "We've found investors where banks were closing their doors and four-month embargoes," says attorney John W. Northrup, of Mobile, Alabama, who has handled escrow-related class-action suits in many states.

Eventually, after an intervention by Florida Attorney General Bob Butterworth, SunTrust closed its "Wildcat" advertising wrongdoing. In 1996 the mortgage company refunded 40,000 homeowners about \$2.1 million in escrow funds and interest.

Since then, because of the SunTrust case and dozens of others around the country, the U.S. Department of Housing and Urban Development has issued order forcing lenders to no more than a one-month cushion on a homeowner's escrow account—an amount most of them do require. A few mortgage companies, however, ask for only a one-month cushion or none at all.

#### HOW MISTAKES ARE MADE

The new regulations have helped reduce mistakes, but they don't assure people should assume that their escrow bills are accurate. Errors in these accounts still crop up, mostly as a result of miscalculations, and these days they more often result in underpayment of escrow. When that happens, it can be an inconvenient and panic-producing mistake for a homeowner, who may suddenly

be faced with a whopping back payment to make.

It doesn't take an advanced accounting degree to double-check a lender's numbers. By adding up annual property taxes and insurance and dividing by 12, you can figure out what the monthly escrow should be each month. Then, check with the bank or mail the mortgage agreement to determine whether the lender requires one or two extra escrow payments in a certain month that add up to an amount over a year, and add it to the base monthly figure.

Mortgage experts say that homeowners should be particularly vigilant when they receive notification that their mortgage has been sold from one lender to another—a frequent occurrence these days. If data is input incorrectly during the transaction, it's possible that an escrow account may not be analyzed and updated for years. "Sometimes loans slip between the cracks," says David Gunkling, author of *The Homeowner's Escrow Kit* and president of Escrow Tech, a mortgage software company that also audits escrow files.

A significant shortage can develop in an escrow account over time, as taxes and insurance increase but the monthly escrow bill fails to keep pace. Most lenders perform an annual escrow analysis, which is sent to homeowners, but calculate whether there is enough money in the escrow account to cover taxes and insurance. As a result, it's likely that a bank will realize any mistake. Whether the error is caught then or later, the lender will ask the borrower to come up with the shortfall, which could amount to thousands of dollars, says Gunkling. If the underpayment is greater than one monthly escrow payment, the lender is required to spread out payment over the next 12 months. But if it's less than one payment, it has to be covered within 30 days.

#### WHOP! AT EIGHT?

Scams on e-bay can occur when homeowners refinance a mortgage, particularly if the loan closes around the new year or late in the year. "There could be confusion over whether past old loans or your new one is going to make the payments," says Scott Maier, vice president of escrow operations at GMAC Mortgage in Whittier, Iowa. To be safe, Maier advises, people should check a few months after refinancing to make sure their escrow accounts and tax payments are up to date.

It's tempting to blame the bank or check with customer service for escrow mistakes, but frequently it's the homeowner's fault for not telling the lender about improvements made to the house. As these raise the value of a property, they can trigger increases in taxes and insurance premiums that require higher escrow payments.

Time professionals can overlook the importance of keeping the bank informed. Recently, Brian Beckman, Realtor, manager of a Wichita real-estate office in Kansas, Kansas, Pennsylvania, made improvements to his house and decided to bump up his mortgage to cover the new value of his property. But when he gave his new escrow analysis six months later, he found that the account was short \$700, because the monthly escrow charges had not been increased to reflect the higher payments. He had to scramble to make up the difference. "What I should have done was notify the lender right away so that I wouldn't have been paying escrow from based on the old policy," says Beckman.

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#### OPTING OUT

More than 70 percent of mortgages require escrow payments, according to the Mortgage Bankers Association of America. For instance, all Federal Housing Administration and Veterans Administration loans include escrow provisions.

Most lenders want to pay property taxes and insurance themselves to avoid the risk that the borrower may forget. Besides, many people prefer to spread their tax and insurance costs out over 12 months rather than send one or two big checks every year.

However, for homeowners able to negotiate loans that don't require escrow, it's worth considering the option. First, not all lenders pay interest on an escrowed account. For a list of states where lenders must pay interest, see the Web site of the Mortgage Bankers Association of America at [www.mbaa.org](http://www.mbaa.org). Borrowers who opt out of escrow have the chance to shift their funds every month to a savings account or money market fund and earn anywhere from 2 to 5 percent on it.

What's more, by making their own tax and insurance payments, homeowners have more flexibility in choosing their insurers, says Valerie Adamsen, a certified financial planner in Woodville, New York. For instance, sometimes it makes sense to pay for next year's property taxes to get a higher income tax deduction in the current year—to effect, say, big gains in the stock market.

And some people use it as solid collateral to pay up escrow and pay the house themselves. "The shock of having to cough up a check every spring and actually pay close attention to where that money is going is good for me," says Peter Vondrahl, a biologist in Hesperia, Colorado. "The sense of savings over tax increases should not be diluted through dilution by taxes."



## Sowing Lessons

### How Roger Cook reseeds a worn-out lawn



It's been said that grass grows by inches and is killed by feet. Melody knows that better than The Old Horse but swiping someone's finger. "Pen, fences, weeds, not enough sun or water—there are lots of reasons for bald spots on a lawn, and a linear every yard has some," he says. Roger's regimen for restoring the grass is to start using a five-step process that involves aerating and grass, leveling the soil, adding a shallow layer of lime, spreading new seed and, finally, watering.

Demonstrating his technique in the yard of a client's Boston-area home, Rogers rakes a mat of perennial cool-season grass seed and then rakes it into the soil with an upside-down leaf rake. He explains that the seed needs moist soil and mild temperatures to start growing. "Cool-seasons bear when the sun isn't hot and drying," he says. Based on the height of summer and the grass has to compete

such more aggressive words for light, warm and narrow: ("You can grow a great crop of melons in June," he says.) Based almost on water and the temperature can drop too low for the seed to grow; not on for harder sprouts to survive, and then may wash away the seeds or leave them so waterlogged that they rot.

As Roger finishes up the job by giving the newly sodded patch a quick spritz with the garden hose, he says, "Branding that in the fall starts these homeowners from having to look at a ugly yard next summer." Within a week or two, new grass sprouts will be poking up from the dirt. And new owners, provided the city's simple weeds and sunlight, their lawn will be so lush the visitors won't be able to resist locking off their shoes and letting the soft, spongy blades absorb their feet. "I'll be sure for anyone a bit blasphemous," says Roger. "But leave the blasphemy in the garage."



(October 2004, May 2005)



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## Working Weekends

Homeowners redo a 19th-century farmhouse in their spare time

W

ith its weather-beaten siding, concrete-floor front porch, and dusty windows, the small farmhouse in Columbia County, New York, seemed to have little going for it other than an easy, one-hour driving distance from New York City. In fact, when their mother-in-law showed them the place, Howard Dostalovics and Mark Fisher almost turned on their heels and left for good. Mark's painfully banging his head on the low, sloped ceiling of the aptly named "dude's" help. "We drove away thinking we wouldn't be back," says Howard.

Upon reflection, though, the men agreed that the place did possess a certain charm. Even though neither of them had lived in or worked on an antique wooden house, both were dead set on renovating one, and this little house dated to 1850. The 1,649-square-foot structure was situated on a quiet country road that weaves through open fields. It had two bedrooms and bathrooms, a workable though outdated kitchen, and a ground-floor gear room/entry that Howard, a psychodrama who enjoys painting, could turn into an art studio. Mark, who is the foreman at the construction of the Brooklyn Botanic



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Gardens in New York City, also seemed at least an acre to landscape, and the property offered him exactly that.

The dooding factor, though, both admit, was the price. A local lawyer hinted that the sellers might settle for less than the asking price of \$1.19,000. "You're the only buyers around," he confided. So they played a bid in the low \$100,000s, and it was accepted. "What we didn't know," Howard adds, "is that we'd end up spending twice as much as we expected on the renovations"—which included building a wing and adding a porch.

At the time they closed on the house in October 1995, Howard and Mark had budgeted just enough to cover the repairs that the pre-purchase inspection revealed to be urgent, including upgrading the 68-amp electrical system to 200 amps ("When the fridge went on, the lights dimmed," Mark recalls) and replacing the leaky oil-burning furnace.

After the work was completed, the men rolled up the sleeves and set to work. First, they focused on indoor projects: replacing cracked windows, stripping wallpaper, and pulling up the carpeting—which revealed wide, heavy-hewn pine

floorboards throughout the house. They also patched plaster walls and painted most of the rooms in the house a warm yellow beige.

As the men became more involved in their projects, "we realized how much we'd enjoyed getting our hands dirty," Howard says. They also came to understand that what they really longed for was a space bigger than their 330-square-foot converted living and dining room in which to exercise. A 16-by-20-foot one-room addition, they figured, would give them that—and, if they started in on all of the old kitchen additions, they might be able to address the backyard drainage issue when they prepared an foundation.

Because they had such a clear vision of what they wanted, Mark and Howard hoped they could forgo an architect's fees and work directly with a builder. Their wish was fulfilled in the person of Ed Klingler, of Chatham, New York. Although he calls himself a carpenter, Klingler has built and restored complete houses. After looking over a four-room mock-up of the addition that Mark—who's built models since he was a boy—had constructed, Klingler spoke the words that caused the men to hire



The chimneyplace for a new fireplace extends into the addition. To conceal it, framing above the fireplace was faced with wallboard and painted.

him on the spot. "I don't see why we can't do this."

First, Klingler outlined what work he would undertake with his crew. The major order of business was to excavate for the addition and remove various obstacles: a concrete base under a clubhouse and a similar one that ran along the front of the house (see "Forever Free," page 52), plus a small foundation off the kitchen and a shed. The crew also leveled a section of earth off the addition for a planned patio.

Then, Klingler set about adapting Mark's four-room model, in doing so, he managed to address several seemingly conflicting objectives. The men wanted the addition to be level with the existing home, without stepping up or down into it. At the same time, they asked that its ceilings be one foot higher than the 8-footers in the kitchen it would adjoin. Lastly, they requested a smoothly flowing roofline, to avoid the jumble of gables so common on houses with multiple additions. Klingler fulfilled these wishes by giving the new room a higher roof, then adding a "conceal," a gradually sloping roof bridge that connects it to the older portion of the house. To unify the roofs, he clad all in architectural asphalt shingles. He also ventilated the old one with soffit vents and insulated it, to prevent ice dams.

Once the addition was closed in and the roof put on, the homeowners, with expert advice from Klingler, designed the interior to reflect a formal sensibility, with 12-over-12 windows facing in three directions, bookcases built into the wall space



With the 12-over-12 windows, Klingler kept the room's traditional feel intact. He drew new drapes, built in a couple bookcases, and

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ringing the room from the kitchen, a side new back-lane fireplace surrounded by a 1970s Federal enamel on the opposite wall. These refined elements complement the simple, clipboard curtain.

As work progressed, the men took on as many money-saving tasks as they could, such as pruning and painting the clipboards, sanding and finishing wood floors, prepping paint, oil the enamel, and applying fresh water to the back-lane. "Each one of us would do his bit what we could do to help," explains Howard. "Otherwise, we would not be in the way." The partnership notes that Klingler would stop by most Saturdays to discuss the previous week's progress, outline what the week to come would accomplish, then explain what he thought the men could finish over the weekend.

Despite everyone's best intentions, the project ran over budget, due to extra work the homeowners decided to have done. Big-ticket items included removing existing stairs, re-siding the back of the house with new cladding, and addressing the backyard drainage problem. To improve the drainage, Klingler buried 4 inch perforated PVC pipe along the foundation in back of the house; the pipe divers were in a trench on the far side of the property.

Even with the addition complete and the on/off issues resolved, a collapse of Mark's allowed him to start working part before any work on the patio and garden, "to let the soil settle." The excavation for the addition had unearthed balking limestone and



## FRONTIS PIECE

One striking point for Howard Dorelancie and Mark Fisher was whether to renovate the profile on the facade of their home—or



less. Bill Griffiths, Howard's son (and Bob's nephew/builder) Ed Klingler was clear that the existing structure's exposed-and-appealing concrete foundation had intrigued right up against the wall of the house, if so, it might have trapped moisture behind it, rotting out even siding and the sill plate. If the men were willing to invest in a remodel, Klingler said, he'd explore the chimney in-situ with two benches hard built himself. And

Before removing the old columns and railings, Klingler braced the roof with two full timbers, luckily, demolition of the concrete base and steps revealed no damage to the house; the porch's roof, too, was in good shape. So Klingler dug holes for plastic drains, filled them with construction tubes, and filled the tubes with concrete to create support pieces for the new, rounded columns. He replaced the stairwork along the facade side sill, then framed out the floor of the porch in pressure-treated wood, added steps, and laid the full 12-in. railing. Klingler braced the columns in size and set them in place, then he built and installed the benches, so he'd be finished. Two coats of paint completed the job for the day.

stone overappings, which would influence the design. Besides, deer-damaged and damaged plantings made the property look "messy," says Mills, the kitchen man. So the men topped out a number of five-foot-high posts that were smothering one side of the house, as well as other large plantings, they also demolished an overgrown backyard barbecue pit.

When Howard suggested that Mark "think of the garden as extending from the woods and flowing down to the house," the project started to bloom. The men chose limestone to pave the patio, an area that now measures 600 square feet and is designed to extend some 14 feet beyond the side of the house to take advantage of the view of nearby hills. Local landscape architect Matt Tomick provided the plan for laying out pavers. Designed as an aspect for mowing with a curved water edge, it accommodates the contour of the garden at the site.

The homeowners had peeled the stones in a local building supply store and had them cranked to the house, along with 10 yards of gravel, stone dust, and a landscape cloth. They then walked them in their edges, one by one, up to the patio site. One hot weekend in May, they spread gravel over the leveled patio area and laid down the landscape cloth, which would prevent the layer of stone dust on top of it from eroding into the gravel. Using a rented tamper, they compacted the first layer of stone dust, then applied a second, which they left uncompact. Following their work, the men laid out the pavers, including the ones with curved edges that had been shaped by a stonecutter, and, finally, he added on a final layer of stone dust to fill the cracks between them. From start to finish, the job took four weekends.

When work was done, Mark and Howard finally found time to sit on the outdoor chairs and enjoy the fruits of their labor. Of course, the bill didn't last: Mark is already planning what to place in some containers he bought for the new patio. ■



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## HOMEOWNER'S STEP-BY-STEP PROJECT SERIES HANDBOOK

### HANGING CLAPBOARD SIDING



Tom Olive puts the finishing touches on this siding job by nailing up the final board over the last course of pre-painted cedar-shingle board. Some nailing on a ladder is a must for this type of work.

BY CHARLES WARDLE

Since colonial times, Americans have protected their houses from the weather with this, overlapping wood planks known as clapboards. This siding, which got its name from the Dutch word *Alappen*, "to split," was originally hand-split from logs of white pine, hemlock, spruce or cypress. Later, saws did the work, turning out miles of delicate, tapered strips less than an inch thick.

Today, clapboard siding comes in a variety of woods, widths, and lengths, as well as in such man-made materials as fiber-cement. But as far as This Old House general contractor Tom Olive is concerned, western red cedar is still the best choice for the money. "It takes paint easily, goes up faster than shingles, and as long as

it's installed properly and well maintained it can last the lifetime of the house," Tom says. "It looks great, too."

Choosing a good material is just the first step, however. A long-lasting siding job requires tedious prep work before any board is nailed up. And a good-looking job demands careful alignment of the butts, the clapboard's tucked lower edges. Tom lines them up with the top and bottom edges of the window trim, and with the courses on adjacent walls. "You can adjust the spacing between the butts up or down as much as 1/8 inch to make them line up where they should," Tom says. "As long as you make the adjustments gradual, nobody will notice." That the siding will appear perfect, even if the house isn't.

—Leslie Morthof

PHOTOGRAPHS BY DAVID GARMACK

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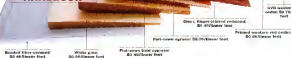


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## HOMEOWNER'S HANDBOOK



A variety of wood species can be milled into beveled clapboard siding, and now there are unbewelled planks molded out of fiber-cement that can be hung in much the same manner as wood. Yet given his diatribe, Tom Silva prefers to use clapboards made of western red cedar. "It's lightweight and durable, and it holds paints and stains better than other products," he says.

**Materials** Cedar clapboards come in various grades and in widths from 4 to 12 inches. Tom almost always chooses 6-inch-wide stock made from clear (knot-free), vertical-grain (quarter-sawn) lumber, a grade known by the acronym CWG. These narrow, quarter-sawn boards expand and contract less than boards with a "flat" grain. He orders them primed so "the back of the board gets an added layer of protection against moisture." Tom is no less particular about the nails he uses. Only stainless steel ring-shank will do. Galvanized nails may eventually rust, causing them to react with cedar and stain the wood.

"Throw away the level and align the boards with the house's existing trim."

—TOM SILVA

## Tools & Materials



**See also:**  
 1. Siding or sheathing for marking high spots.  
 2. Siding seal for cutting clapboards to length.  
 3. Siding seal for ripping down the starter strip.



### STEP 1: WEATHERPROOF THE WALLS

1. Insurexpress and film has already been installed; apply 12-18-in.-wide splines of felt behind the corner boards and the side casings next to doors and windows. If there is no housewrap or film, use "Flashing Around" (see page 10).
2. Loose studs by tapping screws the wall with a hammer and leveling for that stud. Using a chalk line, snap lines from the top to the bottom of the wall in each stud location, typically every 16 or 24 inches.
3. Bend flashing over the top edge of the water table (see illustration, see page 10) so at least 1 inch extends up the wall. Secure the top edge of the flashing at the stud with 14d nails. Overlap the ends of the flashing 3 inches, and seal joints with a paintable synthetic-rubber sealant. Staple 12-inch builders' felt above the water table so it covers the flashing.
4. Staple 2-inch-wide strips over each stud line (see page 10). This creates a breaking space and provides an escape route for any condensation that might form behind the clapboard.



### STEP 2: HANG THE STARTER COURSE

1. Using a utility saw, rip 12 to 15 inches off the top of a clapboard to make a starter strip. Shim or prop up its thickest edge about 1/2 inch above the water table and secure it at every other stud location with one 7d nail.
2. Line up the thick, lower edge-of-but edge—at the first full width of clapboard so that it covers the starter strip and lies a hair above the water table. This is the starter course. Sequence a full board of starter into junction where end and corner boards meet. End clapboard ends into it. Leave each end about 1/2 inch shy of the corner board to allow for wood expansion. At each stud location, about 6 inch above the siding's butt edge, drive one 7d nail flush with the surface of the clapboard.
3. If clapboard isn't long enough to span a wall, splice two together with a 4d cleangr nail joint cut with a utility saw (see "Flashing Around") and centered over a stud (see page 10). Apply sealant to the ends, fit them together, and drive one nail through the overlapping board 5 inch to the side of the joint.



### STEP 4: BEND BEHIND WINDOWS

1. Cut to fit the next course between the corner board and the window(s) and align its butt edge with the bottom edge of the sill. If the sill has a hole, mark the butt edge of the board to fit around it. Seal the ends in contact and nail it up.
2. Hold the siding tick next to the window's side casing and align its mark with the top of the head casing. Bring the bottom of the tick out to one side using the mark as a pivot point. When a mark on the lower part of the tick lines up with the butt edge of the last installed clapboard, transfer the marks on the tick to the wall (see page 10).
3. Transfer the marks on the wall to the siding plane as in Step 3. Then transfer these marks to the side casing and corner board. Flap the waterproofing/membrane pieces on the opposite corner board.
4. Cut, caulk, and nail up the siding as in Step 3, leaving about 1/2 inch at each end and for the wood to expand.
5. Stick on 6-inch-wide piece of waterproofing membrane above the head casing, and extend it 2 inches and the casing on each side of the window.
6. Cut and bend a 3-inch-wide piece of flashing over the membrane and the window casing so that it overhangs the face and edge of the casing by 1/2 inch. Fasten the flashing's top edge to the wall with 14d nails.



#### STEP 2: LAY OUT AND NAIL THE FOLLOWING COURSES

To ensure that the courses are evenly spaced, make a "swing stick" out of a straight rod at least 8 feet long. Starting at either end, make a series of marks along one edge, each equal to the clipboard's maximum allowable span (e.g., every 4 1/2 inches for 8-inch-wide stock). Mark an arrow on the end of the stick where you began measuring (see).

On the wall, snap a chalk line even with the window's bottom edge.

Stand the swing stick upright on its arrow-marked end anywhere between the window and a corner board. The end should lie even with the bottom edge of the starter course (see). If any mark on the stick aligns with the chalk line, simply transfer the marks from the stick to the wall. If none aligns, pivot the stick in the direction of the marks until one line up with the chalk line (see). Transfer the stick's marks to the wall.

Take a length of clapboard as long as the wall is high (depending on the wall, and holding it vertically line up one end with the butt edge of the starter course. Transfer the marks from the wall to the clapboard (see).

#### STEP 3: SETTING AROUND THE WINDOW

Place a starter edge (the snap piece from Step 2) against the framing and hang the course above the window. Nail about an inch above the butt edge to avoid puncturing the flanking. Do not tie line up any joint with the edge of the side casing.

To establish spacing for the remaining courses, mark the corner boards up to the V-line board using the story pole from Step 2 as a guide. Chalk and nail clapboard up the wall. If there's rain, slip the top edge of the last course behind the V-line board before nailing. Otherwise, flip the top of the last course to fit flush against the V-line's bottom edge and seal the joint with caulk. Repeat Steps 2, 3, and 4 on neighboring walls.

If the windows are at the same height on the other walls, transfer the marks already on the story pole to the corner boards. This way, the butts on adjacent walls will be aligned. But if the window heights differ, follow the swing-stick process outlined in Step 2.

On gables, nail up 1x4 strips of spacers to the wall alongside the rafters. Then cut the clapboard's ends at an angle to fit against the inside edges of these strips. Cover the ends by nailing a trim piece wide enough to cover the steps of spacers and the ends. Nail into both the clipboard and the trim.



This is your "story pole." Place it vertically alongside the corner board, secure the marks made from the swing stick, line up its end with the starter course as before, and transfer the marks onto the corner board with a pencil and squares. Repeat the process to create a matching set of marks on the opposite corner board.

Spacer: tuck into the wall-corner board joint. Bedding the ends of the second course into it align the butt edge with the story-pole marks on the corner boards. Nail the clapboard to the studs as in Step 2.

If more than one clapboard is needed to span a wall, snap a chalk line between the marks on the corner boards at top of the course being overlapped. Join the clapboards with scarf joints as in Step 2. Follow the chalk line to align the butts. Stagger the joints as you work up the wall.

With a utility knife, notch the top of the board to fit beneath the window (leave the nailing for Step 3). Apply caulk under and around the window sill and nail up the course (see).



#### FOR WANT OF A NAIL

While not as a pair with the rafter, cleave over fasciated water or the entrance of the roof, the double-cleaving, contrary way has skilled carpenters and claspboard makers into two opposing camps. Speaking for the manufacturers, André Hebelick, executive director of the Western Red Cedar Lumber Association (WRCLA), argues that a cleaved board should be nailed into a stud with one nail, its butt up from the board's butt edge. Says Hebelick: "With one nail, the wood can expand and contract freely." He says that if you pin a board in place with two nails at one end, it increases the chance that the wood will split, particularly along the cleavage's thin upper edge.



Turn Steve, a longtime double nailer, says he hasn't seen any problems with cracking—"If the top felt both of a course cracks, then it's caused by the seams above it," he says—and he enjoys the freedom this technique gives him to adjust the spacing between courses as he needs to, without altering the nailing pattern. Steve considers that splitting might be more of a problem if he used less expensive and more movement-prone East-west or locally grown, instead of CVD stock. And for first-time siding installers, he suggests following the WRCLA's guidelines. "If you don't have a lot of experience, go with one nail," he says.—DAVID BULLING

#### PLANNING AHEAD

To estimate the amount of stock needed for a siding job, measure the height and width of all the walls to get the total square footage of the surface area. Then deduct the area of all the doors and windows. Take that measurement to the lumber yard, where, based on the width and exposure of the siding you want, they will determine the number of linear feet you need.

On the job site, pretend nothing is there. It doesn't get and before going on.

Cover walls with housewrap or 15-pound builder's felt. Seal housewrap seams with tape overlap by 6 inches by at least 4 inches.

Install trim (corner boards, window and door casings, and shut with water table, if any) after installing housewrap.

Before cutting a joint, place a strip of clapboard underneath the one being cut so that the butts are on opposite edges. Otherwise, the cut and the joint won't be straight.

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# LETTER FROM THIS OLD HOUSE

## Our Home...For Now

BY DAVID AND JANET MOORE

**E**very day we count our blessings.

It's been two years since we bought our 1883 Shingle Style home overlooking the harbor at Manchester, Massachusetts, and when we walk around our gardens, we still wonder what we did to deserve the honor of being the caretakers of this incredible property. We don't really think of ourselves as home "owners" so much as temporary stewards.

We first understood our role at the closing, when we had a chance to see the record of all the prior owners on the title documents. Reading this century-old catalog, we realized that someday we would be just two more names on the list. It expressed to us our responsibility to leave the place in good shape—not just for the next people who live in the house, but for everyone who sees it in its setting. Each of the properties that line the harbor is like a dot in an impressionist painting.

Together, they make up an exquisite landscape, a picture that had evaporated as if from the ether. We recognized that any change we made to one part of it would affect the whole, so we needed to approach it with great care.

This 418-year-old building was begging for a renovation that would reclaim some of its former glory as well as update the structure. The house had had three different incarnations: first as a beautiful example of Shingle Style architecture of the 1880s, then as a genteel Colonial Revival summer retreat for a wealthy family at the start of the 20th century, and finally, in the late 1970s, as a weekend-down contemporary. Both the exterior and the interior reflected the resulting confusion. As you walked around the house, the logic of the design was hard to figure out. There were pillars in the middle of hallways and half-boys midway up the staircase. The kitchen, far from being in the heart of the first floor, where we would like to see it, was a distant, isolated room, an artifact of the days when it was used only by servants.

As we lived in the house and traded old photographs, we familiarized ourselves with its history. Eventually we decided that it was time: not when the Colonial Revival remodel added porches and decks and turned it into an elegant seaside house. We wanted to include some of that style in our version, but the design needed to be simpler and less formal to suit our lifestyle, as well as to pay tribute to the Shingle Style's less ornate look.

Our goal was to restore the house as well as renovate it. We wanted to bring back some of the architectural elements that had been lost in its most recent rebirth, yet we knew we had to approach the project creatively and not strive for a historical reproduction. Repeating houses just for the sake of authenticity is like us design and build very little useful for us. On the other hand, allowing the place to evolve, even as we restore a, common a tradition that started the day it was built. Houses change and grow along with their different residents, our renovation will be another episode in the life of this one.



NEW: T.O.H. project homeowners Janet and David Moore situate their place on their dream's place on the harbor and in history.

PHOTOGRAPH BY KOLIN SMITH

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# backtracking

Plans for the TV show's new project house restore its finest features from a bygone era

BY JEFFERSON KOLLE

Check out [www.thinoldhouse.org](http://www.thinoldhouse.org) for more information on the Manchester project, including restoration plans of the property in progress. Coming later this month: a 360-degree virtual tour of the house before construction started.



ILLUSTRATIONS BY TIM SLATTERY

David McGue stands in the front hall of his once grand seaside house in Manchester, Massachusetts, site of the current Thin Old House project, glistening at the open space around him. He is telling a visitor that although he and his wife, Janet, love the house, they are the first to admit it has problems. "You drive up to this glorious property, walk up six steps, through the fabuloso, formal front doorway and...you're nowhere. It's a colossal disappointment," he says. Except for an elegant, carved staircase at one end that hints at the house's past majesty, the entry hall is plain, featureless, and stark. Everything is white, from the bleached maple floor to the ceiling 17 feet above; it feels rather like a large waiting room, without there being anywhere to go. "But we've got great plans to change all that," says David.

An artist's rendering of the finished project, shown here from the back, is more reminiscent of the house's Colonial Revival roots (left, 1929) than its current appearance (right, 2004).

The McGues' house, originally referred to as the Barn House, was one of three Shingle Style summer homes (the other two were called the Fort House and the River House) situated on neighboring properties overlooking Manchester Harbor. Designed by Boston architect Arthur Little and built in 1883, all three "cottages" were massive structures, wrapped in a rustic cloak of cedar shingles and bulging with turrets, dormers, wide porches, bedrooms, drawing rooms, music rooms, parlors, and servants' quarters. (See "Manchester's Seaside Beauties," page 102.)

By 1901, the Barn House was transformed into a Colonial Revival mansion, masquerading as the Moonrigger, and festooned with miles of white-painted trim, columns, balustrades, balconies, and arches. But by the 1970s, neglect and brutal water-bomb weather had taken

thru wall. In an effort to save the scenic view—and reduce maintenance and energy costs—a new owner rapped off much of its exterior detail, removed some of the porches, replaced windows with aluminum sliding patio and doors with shop windows, and demolished the large wing on the west side of the house. In the process he reduced the grand mansion to a nondescript box.

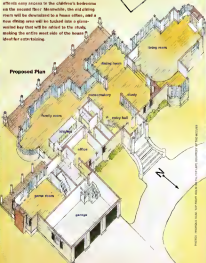
Inside, these major renovations have created a disconnected jumble of rooms, with odd remnants of old trim-work and passageways that wind cross-forever raising walls. "There was no flow," says David. "It's like a maze." The house also seemed to be disconnected from its surroundings. So in June, "We have this wonderful site on the water, yet from a lot of the first floor rooms, we can't even get outdoors."

To correct these shortcomings and restore a sense of the house's original character, local architect Stephen Holt has been working with the couple for 13 months. Holt has more than a passing connection to the McCus' house: His great grandfather was Oliver T. Roberts, who along with his partner, William Howe, built Janet and David's house, as well as many of the other fine residences of the period. "In the 1880s, Roberts and Howe were the top designers in Manchester," Holt says. Holt's understanding of Shingle houses deepened while at Yale, where he studied under famed architectural historian Vincent Scully, widely regarded as the foremost expert on the style. In an effort to untangle all the changes, Holt drew up three sets of "as built" floor plans, one for each of the house's three levels. "We wanted to understand where it had been so we could tell where we should go with it," says Janet.

The design that David and Janet finally settled on embraces much of what was lost in the more recent remodel. A new living room addition, similar in plan and siting to the rear wing designed by Lath, will have a large no-leaking fireplace flanked by 4-foot radiused windows. Diagonally across the room from the fireplace there will be a raised stone with a tiled floor. David, an avid punter who takes rook lessons, has always wanted a stage for his

## First floor

The plans developed by homeowners David and Janet McCus and architect Stephen Holt will adapt their 17th-century house to century life and put back some of its former splendor. One big project involves building new look-glassed porches, remainder of the house's Colonial Revival phase, that will help shade the south side of the house. A living room addition on the west side of the house closely follows the foot print of the wing removed in the '70s. Existing rooms will undergo a major rebuilding. The kitchen, now relegated to the east side of the house, moves toward the center, where it opens onto the newly rest. The old kitchen becomes a game room; its new back staircase offers easy access to the children's bedrooms on the second floor. Meanwhile, the old dining room will be converted to a home office, and a new dining area will be tucked into a glass-walled bay that will be added to the study, making the entire west side of the house available for entertaining.



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## Second floor

### Proposed Plan



### Existing Plan



Bumping out the gable and into the new steel wing adds 4 beds to David's bedroom, and allows the space to become a true master bedroom suite, complete with a walk-in closet and a en-suite bath with a fireplace, double-sized shower, and soaking tub. The bedrooms for the couple's two sons gain much-needed closets; at the same time, the floor holds a bathroom to improve the flow to a poorly configured hallway. All of the McCusker bedrooms will have access to the renovated second-floor balconies that face south, overlooking the water.

## Third floor

### Existing Plan

The layout of this top floor, which contains a bedroom, crafts room, exercise room, and more, doesn't change at all. But this floor gains a different bedroom when the skylights are removed and stone-clad dormers are restored.



### Proposed Plan



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scattered 1906 garden grand piano. "There'll be lots of music and entertaining in this room," says Holte.

Above the new addition, the McCans are going to bump out the garage end by 4 feet to enlarge their second-floor bedroom and increase the size of the adjacent bathroom and dressing room. "I used to have clothes hanging in different places all around the house," says Janet. "But now we'll have a real walk-in closet." The bump out will also enlarge the study below and the room on the third floor above.

Although the bedroom expansion won't duplicate the 1901 dressing room with a massive fireplace that used to be just like the master bedroom, it's another nod to the house's past life. And that's what has TDH general contractor Tom Silver excited. "That is my favorite kind of renovation," he says. "We're bringing something back close to the way it was."

Close to, but not all the way back. The McCans don't want to return totally to the building's Colonial Revival era roots, particularly in room placement and function. A 19th-century summer house built for a family who returned doesn't exactly fit the lifestyle of a year-round, full-time family in the 21st century. For instance, the kitchen presently occupies a wing off the side of the house—fine when you have a staff, but impractical for modern entertaining. As Holte explains, "Back then nobody wanted to see the cooking, hear the cooking, smell the cooking."

Not so the McCans. "Cooking is a big part of our lives," says Daniel. "The kitchen has to be front and center." The new galley-style work space will be relocated steps away from the front hall, in an area now occupied by the dining room, and will open to a 500-square-foot family room. "We'll spend all our time there," says Janet.

The family room, which faces Massachusetts Avenue, has a fireplace view, but the bar in the rear and the glass to the street has been

Tom Silver and Tom Adams consult the plans for the living room addition as they examine the foundation on the west side of the house to make room for the new foundation.

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panishing. Hob's plans will hang out in the form of a shade giving porch. The design also restores the second-floor balconies and puts back their shutters like uninvited at the last renovation. "They'll do a lot for the house's back profile and will help lock up the roof's long glass," says Hob.

The journey from contemporary house to shingled one Colonial will take nearly a year—longer than most The Old House projects. "It's more some like a long term," says Tim. But it's a big project. "We're getting a jump on things already. The owner is in digging a hole for the new wing." In addition to moving some walls, Hob's crew will replace all the electrical wiring, windows, roofing, siding, and interior trim, as well as the new heating system and more of the insulation. "The house will meet today's standards, by all means."

T.O.H. owner expert Niles Allen agrees. "On a house like this, that's gone through more than a few major renovations—with doors and windows moved and floor plans changed—there's bound to be some cobbling together. Fixing that needs to be addressed," he says. "And with the floor plan management and the restoration of some of the old elements, there's a lot of detailed work that will require extra attention."

Out on the front hall, David, Jane, and Hob are having an ongoing meeting of the sort that always happens between client and architect as a project gets under way. "In the old and house," says Hob, "the hall had open arches going into the study. It wasn't closed off with doors in it. It was new." And in the back wall, directly opposite the main entry were two 7-foot tall French doors that opened onto the harbor. "We'll get a back porch close to the way it was."

The idea pleases the McCans, especially David. "This will be our vision. You'll come in the front door, look to the left into the family room and kitchen, look to the right across the study into the living room, and straight ahead you'll see the house. That's what I call flow."

## MANCHESTER'S SEASIDE BEAUTIES

The Shingle Style of the late 19th century developed in response to a newly standard and meeting house ideas, which were looking to escape the same and confinement of Victorian-era urban life. They built their summer homes all along the New England coast, notably in Newport, Rhode Island, and the French town of Boston, including Manchester, Massachusetts. "The names of the houses in this group—the River House, the Earl House, and the River House—were a tribute, say the fact that was different from how they were built in the cities," says Stephen Holt, the architect for the latest The Old House project. "People came to these places to have fun." (For more on the Shingle Style, see "Born in America," September/October 1994, page 71.)

These houses were built by the premier architects of the day, including Henry Robert Richardson, Stanford White, Charles McKim, and William Frankfort Howland. The style these designers developed borrowed elements from a wide variety of residential types, from small, center-island New England coastal cottages to French chateaus. "Shingle is an eclectic mixture with lots of different volumes and shapes," says Holt. Whereas previous middle-class styles were rectangular and ordered, with symmetrical windows and door placements, the Shingle Style is characterized by a mix of flowing shapes and forms—beveled corners, low windows, broad arches, long porches, and steep roofs punctuated with wide dormers (in case of Gamaliel, circa 1870). All of these were tied together by shingles and roofs covered in red cedar shingles, a relatively new material finding its way from the shingle forests of the Pacific Northwest.

Holt calls the Loring House in Manchester (shown here) one of the finest existing examples of the style. Perched on a wooded hill, the building seems to grow out of the earth as the rough granite ledge gives way to a red granite foundation. A finely crafted collage of materials continues up the shingled walls and roof, in the soaring brick chimneys and the solid to the "That's what the Shingle Style is all about," says Holt. "Working with natural materials, using lots of different materials, it's a very organic way."

Knappton Point, probably the greatest example of the Shingle Style ever built, was erected in 1872-1874. It occupied a prominent spot on Little Point in Manchester until 1929, when it fell to the wrecking ball. The First House suffered the same fate in 2002, so here we have of Manchester's Shingle houses. The River House, like the River House, survived, though it without losing much of its original detail. But the style includes a fine grip on the imagination of both architects, such as Robert A. M. Stern, and homeowners. Some don't want modern interpretations, they built as the real thing. "I heard that a couple had built an exact replica of Knappton on the coast of Maine," says Holt. "My great-grandfather would have been proud to hear it." —J.R.



LORING HOUSE: PHOTO BY DAVID GREENBERG

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# water, water, EVERYWHERE

Two ponds and a waterfall connect a house on Long Island Sound to its landscape

BY TOM CORCORAN

**t**wo years ago, a businessman and his wife were bewitched by a particular waterfront property in Riverside, Connecticut. What attracted them was not the house, a '50s ranch, but the land on which it sits: two acres of lawn and rock outcrop that slope steadily down to a broad expanse of exposed rock ledge and Long Island Sound. After they bought the place and moved in, the couple would frequently have coffee or cocktails on the small stone patio at back, which was bordered by a long retaining wall with a set of narrow steps down to the lawn. But they wouldn't stay on the patio for long, soon they'd be descending the steps and crossing the grassy slope to the water's edge. The closer they could be to the water, the happier they were.

Hoping to gain a larger area from which to enjoy their water view, and to accommodate more guests while entertaining outdoors, the pair called John Beger & Associates, a Redding, Connecticut, landscape design firm. "We thought we'd expand the patio with a natural progression of stone terraces down the slope, like something you might come upon in the woods," the husband recalls.

With the couple's request in mind, landscape architect Lee Hand-Pry took one look at the site and thought, "We can't bring the house closer to the water, so let's bring a watercourse closer to the house." Hand-Pry envisioned a central waterfall four steps down from the existing patio, and a fieldstone terrace adjacent to it. The water would flow from a smaller upper pond to a larger lower pond, and would be constructed of natural stone to echo the granite outcrop on the property and the rocks at the water's edge. The project got under way last fall when Hand-Pry flew to Pennsylvania to help select weathered fieldstone slabs close in texture and color to the outcrop for the new terrace. Then, a week later, a crew of nine workers arrived on site, and the real work began.



1) Construction manager Mark Kucurich and his crew tore out more than a third of the park's 40-foot retaining wall and its base concrete edges, replacing them with a 14-foot-wide slab of 4,000 psi ready-mix concrete. Then, they braced it 40 yards of fill and, using a front-loader/bulldozer, graded the area to reduce the slope and to create a level surface where the new fieldstone terrace would be set to the upper pond. To excavate the roughly 2-by-3-foot pond and the water fall, the crew dug until they hit bedrock about 5 feet from the 10-foot level below the upper pond. The bedrock excavated a 7-by-12-foot section of earth for the 8-foot-by-14-foot lower pondwall hitting rock three feet down. Crew members poured concrete directly into the exposed ledge to create the pool floor and built 3-foot-tall side walls of interlocking blocks under the 4,000 psi concrete. They used a castoff use of interlocking blocks to form the curved walls (see).

2) To create natural-shaped curbs for the ponds, crew members dressed in 6 yards of topsoil, then smoothed it over the sides and edges of the foundation to form curved surfaces. As course water would flow its way through this dirt, the rocks ledge floor eventually, the ponds required rubber liners. To prevent damage to the liner from rocks or roots, the crew first filled a machine with 1/2-inch to 1/4-inch of topsoil, then the 1/2-inch of topsoil, a proper formwork placed stones on the edges to keep the underlayment in place (see now).

3) After the crew laid the 45-million-thick sheets of rubber over the underlayment, adjusting them to the ponds' contours, they positioned the liner main sections. They positioned the liner main sections in the ponds' corners. They guided the water from upper to lower pond through the pipes. They also laid the fieldstone that lines the ponds and hides the rubber liners from view, while providing them from the ponds' 12' high walls. Laying workers braced the edges of the rubber liner, holding them down with the coping stones that circle each pond.



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4) To ensure an aesthetically pleasing cascade of water, Wellborn installed the upper water-fall stone (left) so that water would fall evenly along its entire surface and not run off the sides. We sloped the lower stone block (right) flat so the water would collect momentarily, creating a pooling effect, before tumbling down to the lower pond due to the force of the flow.



5) Having made the pond airtight, water-tight, even water-tight, they used a garden hose to carry the water from the lower pond to the upper—and level the water-fall continuously—they placed one end of a 30-foot length of flexible 3-inch PWD pipe just below the water surface at the edge of the lower pond. They then ran the hose up along the edge of the pond's water-fall, burying it beneath coping stones and planting beds, until it reached the upper pond, where they placed the hose's outlet below the surface. At the lower pond, Doug and project manager David Demigko attached the hose to a submersible Cal pump (above) and dropped it two feet below the water's surface. The 1-horsepower, 81-watt electric pump runs continuously and recirculates the 1,300 gallons of pondwater at rates of 5,000 gallons an hour. It's powered by an outlet box buried beneath the planting bed next to the lower pond, which is connected to the house's electrical system by a heavy-duty 8-gauge wire coiled in an underground conduit.

6) The water-fall was now ready for a test run. With the pump turned on and the cascade unleashed, Doug and Demigko watched the water-fall stones to further fine-tune the water flow (above). If the lower pond's water level falls 1 inch or more due to evaporation, it will cause a refill flow, similar to that found in a toilet tank, to lift a valve. This allows water to flow from the existing irrigation system's control box through 50 feet of buried 1-inch PWD pipe (hidden under a coping stone), which empties at the bottom of the pond. It instantly causes the lower pond to overflow, which is diverted into a 7-foot length of 1-inch PWD pipe, which runs into a 10-foot, 6-inch PWD pipe that emerges in a planting bed at the property's edge. Either way, a plentiful curtain of water and two flood-to-the-brain ponds are guaranteed.



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With the water-fall's horseshoe-and-systems (or fish), it was time for Mark Kneadler of John Gager & Associates to bring life to the ponds. First up: conditioning the chlorinated water in the ponds with a neutralizer to stabilize ammonia levels and make the environment safe for fish. Next came the flora. To create a planting bed around the pond's stone borders, he first trucked in 50 yards of loess. Then crew member William Blevins planted grasses (1), one of the many plants—sedums, thymes, Russian sage, perennials and leather are others—chosen by landscaper architect La Hend-Fry for their visual variety and ability to stand up to the site's conditions. "These plants will have to be able to take a lot of wind, sun, and salt air," she says.

Since the pond bottom was covered with rubber sheeting, nothing can be planted directly in soil. So Kneadler installed perforated plastic (2)—including into, potted rain, lotus, hornwort, and water lily (3)—first trapping each pond's soil with pea gravel, then staking stakes in the pond floor as he could eat flowers above the water.

Kneadler filled water lilyponds in both ponds. These fragile tropical plants extract nourishment from the water via their dissolving roots; they generally need to be replaced annually. To ensure

that those in the upper pond don't wash down the falls, he covered them with drift-gauge wire (4) along at the pond's base.

Kel, an ornamental carp, completed the tableau. These hardy specimens can reach three feet in length, live 50-75 years, and winter over in a pond where moving water keeps the surface from freezing over. They can also be expensive—some very exotic varieties cost thousands of dollars—but Hand-Fry believes they're worth their average price of \$400-\$500 (for a 10-inch fish). With their distinctive coloration and their individual personalities, "they become pets," she says. The nice bit for rabbits would be: noticeably elongable bright red-orange-and-white cowboys, and blue-, orange-, and red-spotted shubunkins.

To acclimate the fish to release into the pond, Kneadler floated them, including the current chosen one (5), in plastic bags filled with water for half an hour. He then opened the bags, exchanged a third of the water for pond water, repeated the steps, and let them both acclimate 23 minutes. After repeating that step a second time, the weary 15-hour process came to an end, and Kneadler released each invader (6) into his new home. —*Arlette Reed*



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Cribbing and Jacking

Lengths of 4-footing timbers called cribs, are stacked to hold up a house as existing mud cribs are positioned (above). Similar cribbing supports a 25-ton Indiana jack (below), one of a series that will support the house under the house. They lift the structure off an old foundation and then lower it into place at its new location.

#### WHY MOVED?

Improving the view is one of many reasons to move a house, but most of them lead down to a fractured relationship between the building and its location. Often, properties are seized by local governments to build a parking lot or widen a road, causing changes or roadway improvements can turn quiet residential lots into noisy (and valuable) commercial parcels, or encroaching real estate can make the land more valuable than the structure that sits on it. And sometimes nature takes over, eroding a beach or flooding a levee. If a building on any of these areas has an economic, sentimental, or historic value, insurance money, like the cavalry, would rarely be able to ride to the rescue.

Carl Tiedel, executive director of the International Association of Structural Movers (IASM), says in United States members lift about 35,000 private residences every year, a small percentage of which are temporary lifts—moving houses to repair or replace existing foundations. And, according to mover Joe Beane, of Gray, Maine, the number of moves may be on the increase. "Whenever the stock market tanked, I got busy," he says with a laugh, while standing under a 248-ton log lodge, supported by cribs and 17 jacks, beside a lake in the northern part of the state. "People start moving what they've got worried of knocking it down." He notes the structure was dropped 18 inches and heavy disposal costs are making it unlikely more expensive than erecting the new home. "It's not in the economic viability of a house move." "It used to be you just took everything to the landfill," says Beane. "Today it all gets separated in the transfer station—things in one bin, drywall in another—and that gets expensive." Ron Smalley, of the

Potomac, Maine-based demolition firm Anacorch, says that knocking down a 1,500-square-foot Cape costs \$7,300, while disposing of the wreckage runs another \$4,500.

At those rates, moving the house would be cheaper than demolishing it, depending on the distances involved and the obstacles along the way, and whether demolishing it becomes necessary. Beane says relocating an average 2,000-square-foot house on the same or adjacent property can cost from \$1,000 to \$10,000—including building the new foundation and having subcontractors to disconnect and reinstall the plumbing and electrical systems. But moving houses along local public roads adds considerably to the cost because of the obstacles encountered along the way. Utilities are harder to move than wires—a complicated process that endangers workers and inconveniences customers—and the price of doing so reflects that reluctance. Every community is different, but Beane says a good rule of thumb is to figure that each utility involved—electric, telephone, and cable—plus local poles, will require two crews, one to do their work before the house passes by and one after. The crews and their equipment may cost \$390 per hour. (Add



30 percent of local regulations require weekend moves.) Assuming the utilities and the police charge a team about \$100 an hour, a homeowner could pay nearly \$10,000 for moving just a few wires on a weekday move. Clearing major thoroughfares with traffic lights and electric lines can cost as much as \$20,000 each. Insurance high ways aren't usually possible, because they don't allow cargo wider than 10 feet and most expressways have a maximum distance of 1.88 feet. "When people call me and say they want to move a house, I'll problem the ballpark figure for moving an overhead wire before I bid them a move," says Beane. "Then I tell them to get it done and drive down the more likely route, knowing the overhead wires to get to go. Often I never hear from them again."

Faced with the impediments of deal-breaking utility charges or topographical barriers, owners have the option of cutting a house into smaller, more manageable sections, but that too can carry a

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At the same time, the four pieces of the house's frame are lifted off wooden and poured into place after a new foundation. California code required that the house go through an earthquake-resistant retrofit during the renovation that followed the move.

## Moving in Sections



better price tag—and up the money went—by adding on costs for dismantling, additional trucks, and insurance. That's how Doyle and Julie Bowen managed to transport their 129-year-old Italianate house from Watsonville, California, to the nearby seaside town of La Selva Beach. They acquired the 2,400-square-foot residence for free—it had been condemned because of a 1989 earthquake—after presenting a proposal to move it to a new four-acre ocean view lot just 15 miles north of its original location.

Three came the bad news: a jaw-dropping wire-removal estimate of \$150,000. "There were wires all over the place," says Julie. Their contractor ducked that cost entirely by wiring the house into four chunks and lifting them by crane onto a series of truck axles, so they would fit under existing lanes. The four-track parade south to La Selva was made in the middle of the night for the public-road portion of the trip, to avoid traffic. The journey cost the Bowens \$41,000, plus another \$40,000 to put the house back together, including code-mandated earthquake-resistant straps and anchors. The land itself cost \$330,000, bringing the total relocation bill to \$431,000. Julie estimates they've invested another \$800,000 to gut and completely renovate, but a recent appraisal sets the property's worth at \$3.9 million. "At the end of the day, location is everything—and that goes for a house move, too," Julie says.

## HOW MUCH DOES A HOUSE WEIGH?

Since tackling his first project in 1946, building mover Pete Priesen, of London, Washington, has lifted some 6,000 houses off their foundations, really making him one of the most experienced movers in the country. With one trick, he can size up a house and know pretty much what it will take to get it off the ground. Because every house is different, Priesen says there is no absolute formula for calculating a house's weight. On average, though, he figures a residential house like the one he is currently moving 2.5 tons per 100 square feet of living space. A 1,000-sq-ft house with a two-story chimney adds another 8 to 10 tons. Still, Priesen doesn't even try to make highly precise calculations of a house's weight. "Even if the off by a couple tons, our hydraulic jacks have all built into the capacity that they're rated for," he says. He should know: in 1985 he patented the prototype of the first unit of jacking system—a series of jacks controlled by a central hydraulic pump—still today's standard after almost 30 years. —*Don DiChiro*



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Which the Realtor's assistant appears to have paid off, house-mover experts emphasize that homebuyers should look disproportionately at all the costs before committing to a move. "These decisions are often driven by emotions," says Les Pels of Allstate, Miami, consumer risk specialists on relocating to a sometimes moving 18th-century homes. "If it's a cost \$145,000 to relocate a house, and you can buy a similar house two miles away for \$175,000, what have you really gained?" Joe Bore's rule of thumb is that if a house has no real historical value, a move should cost no more than half what it would take to build the same home from scratch. "If the move will cost 70 or 80 per cent of building new, don't do it," he says.

To put together a realistic budget, you'll need estimates for several movies with local references. (Because lots of house movies also involve renovation, you'll probably need a general contractor, too.) The money will go for the framing and new ones, as well as the installed tissue, assessing the best way to clean drapes and other fabrics. Each estimate should include all costs of demolition and

Shivers get the gist when their Monocle boss tells relocate historic monuments—but the timing bursts of chaos coming as average Americans who were phobically-hispanic in off Main Street. Take-Michael Hall, an electrical construction supervisor in Wyoming, Pennsylvania. When his always, sought a neighboring neighborhood house and planned in whom it down for a parking lot, Hall stopped by to view the 100-year-old building. "I was seeing anything moved that one's collected," he says.

Last year, for a \$100 donation to the church, Kall acquired the house and stored it behind new blocks in a place of property he bought for \$24,000. That's expensive for Weymouth, an off-the-way town near Salisbury, but it already had sidewalks, water, and sewer. More's been the rest of the month worked

- Payment to broker mover East Miller: \$40,000
- Take down 60 or so clocks, photos, and cable TV wires: \$5,000
- Dig and pour new foundation: \$12,500
- Recreational vehicle and plumbing (est.): \$4,000

Including the value of Hefli's work to nurture and replant the forests, the vehicle moves closer to the about \$78,000, far less than it would cost to build new. And Hefli gained a nice piece of business property that earns \$623 a month in rent. "I could probably sell it for \$10,000 more than I paid for it," he says. "And I got comparatively very little about how good it looks."

Nearly Michael Naft's 1036 hours through the crisis of Hurricane, Pennsylvania's (1977), required the removal and replacement of 80 or so overhead utility lines from "Strong the City" buildings, a costly procedure that sometimes resulted in more. (1978) Double-sheathed cables carry the weight of the lines as it slowly retracts the machinery.



transporting, and reassembling the house, alert you to any additional services—such as permits for traffic control—that need to be performed by others, and clarify who is responsible for making the necessary arrangements, including insurance coverage.

A recent effort to carry well over \$1 million in liability insurance to cover injury to people or damage to someone else's property or property you have been hired to work on, a move that probably has no effect on an individual's policy could trigger a "triggers" contest, a matter to policy insurance, the cost of which is passed on to you in the bill. But, to check with your insurer—it is sometimes cheaper to use your homeowner's policy to insure the structure. Another policy is likely to cover contents damage. The ruling scratched by three judges, unless you agree to wrap the whole building in protection to begin. (Replacing a few marred clowdrums might be cheaper.)

Don't forget to budget for damage to new foundations (and filling in the old one, if needed), painting or a driveway, and disconnecting and reconfiguring mechanical system layouts. Passions or other appliances in the basement will require need to be taken to the new site or replaced. Finally, if the house is being lived in, you'll probably want to make the big move on TV off the shelf and pack the few items, but for the most part your furnishings can stay where they are. Books will function a moment. After a house is relocated, the least will convert to a conventional mortgage, a process that may involve paying interest costs and a different interest rate.

[illegible]

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Cutting Into Panels

#### FROM LIFTOFF TO LANDING

If the budget makes the project worthwhile, the initial step is to construct a new foundation that perfectly matches the perimeter of the house. Then, after the requisite asbestos removals have documented the home's electrical and telephone systems, heating and cooling systems, and water and sewer lines, the mover rolls into action.

The moving crew's first task is to cut through the foundation walls and slide two or more steel I-beams into position under the sill, parallel to the length of the house. The beams become, in effect, a new rigid foundation for the structure; they remove the force of the jacks and support the house like a car chassis during the move.

Once the I-beams are in place, the crew erects a series of jack pilings underneath them by stacking crisscrossed timbers like Lincoln's Logs. Each piling serves as a platform for a 15- to 20-ton hydraulic jack, the assemblage of jacks is connected to hoses to a central pump. "That last lift off the foundation is the most suspenseful part," says Brown. "If you've got an old house with lots of corners, you never know which corner is going to snap put," he says. "The first four or five makes a when you feel out where the voids are. That's always the danger that some plaster might crack or a joint will crack. It's sort of the opposite of a house sinking—there's no much you can do—and it can be a successful moment for homeowners. Some people have to leave."

When the house is raised up one to two feet, depending on the terrain and foundation, the crew slides another set of I-beams (called travel beams) underneath and perpendicular to the first. These support a series of crawler dollies—heavy-duty assemblies that allow the house to be rolled off its foundation. Then the house can be jacked and rolled again—this time high enough to wheel on a series of impact tracks and underneath it's time to hit the road—slowly.



In order to move Sloan and Jennifer Marzetti's 2,100-square-foot house along narrow roads and steep terrain, it had to be divided into tractor-trailer-sized panels (above). A worker cuts the rafters free with a reciprocating saw (above left). Careful labeling (left) makes possible to piece the house back together.

At the new site, the process moves in reverse. The dollies help slide the travel beams off the rollers and roll the house onto its new foundation, where the beams are slowly lowered by the cribbing-and-jack system into notches cut into the foundation walls. Once the house is in place, the beams are pulled out and the corners are filled with concrete. Next, subcontractors start reconnecting all the systems, while the homeowners walk through the house checking out the views and looking for cracks. "The funny thing is, as no cracks happen when you are in motion on the new foundation," says Brown. "But a house built on a concrete slab with no basement, movers will often dig under the slab and move it onto the house."

Getting up a house may be big bucks and reassembling them, the way the Browns' mover did, is not all that different from a whole-house move. After the second floor sections have been cut free from the first floor, the beams go under the second floor joists, and crews perform the work of the crawler dollies. But when even a house needs to be shored onto smaller beams. That's how Fort Worth, Texas, contractor Peter Tappert decided to move Sloan and Jennifer Harzetti's 2,400-square-foot cottage in the other end of Schaghticoke Lake. The unexpected, 10-foot-wide driveway leading up to the cottage



A crane helped carpenters reassemble the Harzett's 2,400-square-foot cottage in eight weeks (above). All the details of the rustic interior were saved in the move (left). Eventually, a new stone foundation will be built under the house (bottom right).

was blocked by mature trees, making a whole-house move impossible even tried. And moving it across the water—either by barge or skiff or by truck or trailer—was blocked by lake-side trees protruding under water-level regulations. "We were pretty much boxed in," says Tappert. So he decided the only way was to save the building section small enough to fit into a narrow trailer (which would conveniently fit under utility lines and underground, if needed). The house's long-road skills and low structure portions made the disassembly relatively simple. After removing all doors, windows, kitchen cabinets, and built-in furniture and carefully packing everything in foam and bubble wrap, Tappert's crew stripped off the corrugated metal roof and broke out the reciprocating saw. "We just started cutting rafters free," says Tappert, who even-

ally cut up the entire house—roof and sill—into about 10 sections. In five each piece was craned into a truck, project manager David Jensen retained it into a schematic plan. The Harzett had insured an exact reconstruction, so everything had to be accounted for. "You'd pull off a left piece that on any other job would go three ways, and here you'd have to save it and it'd be it," says Jensen. The process of disassembly and rebuilding was done over a 10-week period.

Reassembling the house required Tappert's carpenters to go against their instincts. "The challenge was getting the crew to put away three squares and let it sit and start eyeballing," says Jensen. "You could see marks on the walls where the framing had been, and you had to put it back together that way or the doors and windows would never fit."

True to their contention, the Harzett according to seeing almost everything, including the old metal roof, the dated kitchen cabinets, and the window with a "Camp Woodstock" graffiti scratched into the pane. "We were head-over heels in love with the house just as it was," says Sloan. "The chance is in keeping a secret, but it's a whole new location." ■







# basement



in chief of *The Old House* magazine. "But sometimes housing stock hasn't aged well, or wasn't particularly of merit to begin with." In this project, the aim was to restore the most desirable elements of an old home in a new, thoroughly up-to-date package. "With this house, we're not only proposing a creative reimagining of the concept of home, using the very high standards of design and construction set by our architect and builder, we're also helping to renew and reinvigorate the neighborhood."

The *Old House* had turned to Eick because of his ability to create modern residences that effectively utilize the vocabulary of traditional architectural elements—such as multi-paned windows, shutters, and steep, gabled roofs. Fortunately, he's also a career at remodeling a house on its own, even when the circumstances seem insurmountable. "In a way, there's no such thing as a difficult job," he insists. "It's just a question of how much research and thought goes into custom fitting the house to its location. I treat the process as cooking like a bird, taking an overview and going to know more and more about the site until, finally, you land."

Initially, even Eick had a hard time imagining just how to "land" the design he had in mind on this property. The blueprints were conceived for a flat, spacious site, but the steeply pitched Atlanta property was hemmed in on one side by the ditch and on the other side by a neighboring house. Furthermore, Federal Emergency Management Agency (FEMA) regulations required that the house be built high enough on the slope

to be in a 100-year flood zone. But as Eick worked with the contractors, actually creating and reimagining the house's footprint, solutions began to emerge.

Turning the front facade 45 degrees away from the street and changing the orientation of the garage solved problems with setbacks rules, which govern how close the house can be positioned to the property line. Making this turn also enabled Eick to use the grade to advantage. Placing the main area of the house across the hillside gave the primary living areas a bright southern exposure and a dramatic, elevated view of the surrounding landscape. Plus, he opened one side of the basement to daylight and to a walk-out terrace, which the house embraces on two sides like a one-story. "Day is beautiful here as well as at Atlanta when a sunset is doing with hillsides," says Yonick, who collaborated with Eick to accommodate the slope in the home design. "We were thrilled to be able to gain an additional level of living space," adds Eick.

Once the zoning issues had been solved, Yonick went ahead and purchased the land, and the *Timber House* was under way. But not without some additional overlooking. In deference to the demands of the Atlanta housing market, Eick needed to find space for more bedrooms, so he moved one over the garage, converted the upstairs study into another, and placed one in the basement. The final plan includes five bedrooms, five full baths, and one half bath.

On the main floor, Eick softened the varied angles of the lot by joining the master bedroom, kitchen, and liv-

# first floor



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To make room for the new project, Yewell demolished the nondescript 40-year-old level that first stood on the site. "The demand for space close to town and the new laws that were already on the property gave me place value as a lot, not as a house," he says.



ing and dining rooms on successive, slightly lower levels from the entry. Ed's original design concepts remain largely unchanged, arranged as it was to serve the before and ends of a contemporary family. For example, because most homeowners enter through the garage, he sorted down the house entry and linked it to the garage entry through a traditional endroom. A central hallway runs from the front door past a home office—which, given its location and abundant windows, serves as the hub or nerve center of the house—to the kitchen. Here the floor plan opens up, and long light lines make each of the rooms feel much larger than they are. The kitchen flows into a dining room and living area with walls of windows that overlook the private terrace and wooded hillside. At the back of the house, there's another terrace and a vaulted-roof screened porch off the kitchen, both can be reached via a set of French doors. "That house should stay this it doesn't belong to any one era," says Ed, of his subversion of traditional decor. "It should feel comfortable new and for a long time to come."

As the architect firm itself has drawings, Yewell conducted a flood plain study for FEMA and began wrapping with the city of Atlanta to get the necessary approvals. "When you go into these or young neighborhoods, they're wary to make sure everything is done right."

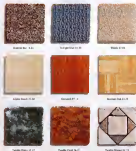
#### BUCKHEAD REVISITED

In the early 1960s, the area now known as Buckhead was a suburban with a few leading jobs and by Charles and Clark Institute. By 1970, a local bond raised up a town center where to build the International of Peachtree and West Point Ferry Road give the area the present name. But until World War I, when an industrial Atlanta factory moved to John Wiley made the present home. Then, the building featured light in the house itself as a flexible place to live. The city of

says Yewell. "They regulate everything from which term you can do down to how much dirt you can remove from the site."

Once the city granted Yewell a hard-won building permit, he was finally free to move ahead. First step: demolishing the existing structure. In an early morning in March, a 60,000-pound pile of rubble was loaded down the quiet street and loaded up toward the house on Yewell's property. For a brief moment, the 4-foot-wide bucket lowered over the damaged roof, then began tearing into the deck. The load crack and snap of wood echoed through the neighborhood as the base methodically reduced the house to a pile of rubble as it scooped into Dumpsters and hauled away. By the end of the day, all that was left was the old Georgia clay for Yewell to dig into and start building a new foundation. "It's going to be tough," he admits. "But we're going to make it work." ■

Atlanta named Buckhead in 1958 and started a building boom that introduced a wide mix of income levels. Today, Buckhead's 41 neighborhoods—which cover a total of 28 square miles—enjoy a mix of housing stock ranging from one-rooming trailers to elegant Colonials. The Gentlemen's area of Buckhead, which is where the Times Home is being built, has only recently undergone a resurgence as properties are being converted and values are steadily going up.



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## a house for all seasons

A thoughtful renovation transforms a rough-and-tumble weekend cottage into a year-round residence

BY BARBARA FLANAGAN

**“I**t was just a beach house,” says Lauren Papp. “A getaway.”

And that was fine, for a while. Then it was time to make some serious changes to this 160-year-old Bay Head, New Jersey, house. With the help of a clever redesign, Lauren and husband Perry Pappas transformed their once-rare weekend hangout into a full-time family home—with a new master suite, kitchen, home office, and nice-sized bedrooms for two kids. “It’s cozy and cute from the street, so people are always shocked to see how much room there is inside,” Lauren says.

Renovating a family was not at all what the couple had in mind in 1993, when they bought what was then a five-bedroom, two-bath cottage. The three was simply a place to have fun. Lauren, who had “taken shares” in several summer weekend houses with friends from Manhattan, had introduced her future husband to Bay Head years earlier. After Lauren and Perry married, they rented different houses for a few years before finally deciding to buy.

When they began looking, they wanted only one thing, proximity to the water. “This house just happened to be the one nearest to the ocean—black and a half away,” Lauren says. The 1,700-square-foot cottage wasn’t particularly beautiful, but they didn’t care, since they figured they’d be spending their time at the beach anyway. They also thought the five small bedrooms would make a convenient “youth hotel” for visiting friends.

But after they had a daughter and son, Lauren and Perry gradually discovered that “we kind of work here better than our work.” Compared with the day-to-day logistical challenges they faced shuffling kids around New York City, the beach, the backyard, the friendly neighbors, and the ease of living there became increasingly seductive.

So they decided to settle in Bay Head and to make the house more livable. Because Lauren didn’t want to commute to the city, she needed a home office. And the four bedrooms upstairs were small and dark, with tiny closets, slanted floors, and slanted ceilings that were only 7 feet 3 inches at



Before the renovation, the Bay Head, New Jersey, beach house had a shed dormer along the front of the roof (above), with a steeply pitched roofline and windows with points over larger windows (middle), which added to the overall floor. You can see the new, open structure behind the old one (below). “It matches the rest,” says Lauren Pappas, and a fresh white interior (below) from top to bottom.



## STAIR MASTER

As much as Lauren Payne liked the Rusty, multi-tiered staircase that came with the Bay Wind home, she never wanted to be in the right of her two small children bounding down its precarious front-staircase windows. So when it turned out that the steps were too steep and narrow to pass together, she considered it a blessing. "Come out contractors told us just how out of taste the old staircase was, deciding to replace it because that much makes sense," she says. Though the new cove-crenelled oak stairs came from the living room, it's still worth the price of about \$1,000.

[15] Further there seemed the staircase to be an arbitrary accident, constructed by the same Thomas McGee and not at all considered if placed into, only a landscaping man had to cut it into two equal parts. (The two-stemmed staircase are visible in the bottom right corner of the picture) [16] To incorporate the more purely political aim of raising the sidewalk (which had to be extended by two feet. That meant leveling and a number of deep cuttings in that the necessary modifications could be made to the framework overhead. [17] The top flight of the staircase was prohibited from going by a local maintenance, with its four steps over 125-inch boards, according to code. After attaching it to the number [and the rail, stairs, where they were to be, the crew installed the six-built four-step strikers. Where they formerly made the 30-degree line, it was three steps, the new set complete. It is in, with the raising and of each level mounting 10 inches more. [18] Though safety prompted the replacement building, the leveling and-enlarging of the incident stay would have required a new staircase assembly, as seen here, the new staircases going, trained at of a sturdy 30-40-85-inch horizontal line, actually here, a few inches above the rail. — Doc DiGirola

their highest point. For a summer place, the couple qualified as squatters, but in a pressure-cooked home they just didn't quit. The couple wanted to transform these four bedrooms into three large suites—and throw in a few closets while they were at it—plus add a master suite for themselves. The question was, says project designer Tom Deegan, president of *In Progress Remodeling*, in Red Bank, New Jersey, could these goals be achieved by sawing, or would they have to tear down the house and start from scratch?

The homeowners, who were proud of their 100-year-old house, were clear that they preferred to work with what they had. "We wanted to keep it looking like a vintage house," Lawson recalls. "And as we got further into it, we realized we could bring some of the rooms out and have a whole new home."

That was true for the downtown, at least. There, architect Edward Ballinger's *City of Progress* enlarged the 1970s on location by raising no adjacent side streets into a 4 by 9 foot boulevard space. The complex replaced the worn limestone floor and where it merged through columns with a limestone floor and white painted wood subway into a country look, and added an island topped with benches black and enclosed with wickerwork. A playground, humped on and given a bay window, became Luster's home office, while a show was a bedroom was turned into a playroom. Although the living room stayed within the original building, the owners made a nice comfort and gave a more character. They replaced the original, where once more with a "mini, mini, mini," left, and either the loss of these several things by using the space between the stairs for cement, built in shelving. Then they added the fireplace extended in ivory blue, covering it with oak and oak tiles, and painting the walls with other neutral broadwood.



For the changes to the second floor were what really allowed the home to grow. Deegan showed the homeowners how the existing second story, which had a much smaller footprint than the first, was wasting plenty of potential square footage. He suggested tearing off the old gable roof, with its intricate steel truss system spanning the front of the house, and replacing it with a rafter-topped roof. This would give them more bedrooms on the second floor and permit them to build out a master bedroom over an old first-floor addition at the rear of the house. By doing so, they nearly doubled the size of the floor (to 1,200 square feet) and improved the proportions of the house, without making the house seem larger than its neighbors. The architects further widened both the exterior and the interior by installing larger windows on the second story and putting porches on the rooftop above them. The master bedroom now has a soaring ceiling that angles sharply up to a 9-foot height.

Tearing up the second floor was emphatically not what the owners had envisioned when they started the project. When demolition began, "it was shocking to watch our home go from a two-story house to a one-story house," Lattens says. "But it made up the tears and he made it."

But as the upstairs level was dismantled, they realized that it "was put together very well," says contractor David Thomas McCann, and that the second floor was an extension of level. Further work downstairs revealed

before first floor



after first floor



before second floor



after second floor



KIMBERLY BROWN



When the second floor was removed, the homeowners discovered that the original second floor was an extension of the first floor. This allowed the architects to create a new second floor that was a true extension of the first floor, rather than a separate addition. The new second floor is a true extension of the first floor, rather than a separate addition.

The addition of an eyebrow window and French doors leading out onto a narrow balcony opened up the main living bedroom to the outdoors. "There are nights when I'll crawl out here and the moon will be framed perfectly in that window," says Lauren.



#### LIGHT AND LIVELY

To install a 2-foot-wide by 4-foot-long oval window in the second-floor hallway, contractor David Thomas McCann first inserted a handle, a sill, and two trimmer studs between the 2x4s) inside. He then braced an outline in the 1/2-inch plywood sheathing (1), followed a cardboard template provided by the manufacturer. After rolling the bits with a jigsaw (2), he braced the rough opening (3) with diagonal blocking. Then he aligned it to the wall surface, leveled it with wood shims, and nailed it to the blocking with 15-kiloh-plywood nailer (4). Finally, after loosely insulating around the frame, he trimmed out the window with maple casing. —Don D'Arcy

that the house was sagging. Although it wasn't unusual "to put beach houses right on the sand," McCann says, this one used no back-pier that ran down the center of the house. But the house had tilted,

and the piers were no longer positioned in line with the main load-bearing wall. McCann roughed out the structure by pouring concrete footings around the main perimeter and replacing the corner piers

with two 36-by-96-inch girders made of glued-laminated beams, spaced 4 feet apart, running from the front to the back. Then he was able to build the new, expanded second floor.

Higher and wider, the new second floor intelligently resolved the problem of the sloping surroundings. The 600-square-foot master suite features a cathedral-like ceiling with an eyebrow window capping French doors. "We wanted to create some sort of special effect in the bedrooms," says Degross. "The vault brings in light by capturing some of the sky and the ocean." The French doors open onto a 3-by-9-foot balcony, just large enough to fit a couple of chairs. The master bath has two sinks and a shower big enough for two, the walls and countertops are covered in a large to carry assortment of small square tiles, accented with larger, two-color tiles. In addition to the master suite, the aptos contains two bedrooms for the kids, plus one guest room. The old bath got new fixtures and fit what. "In the summer, we really go a weekend without guests," Lauren explains. "We can pack a lot of people into the house. And every one loves it because nothing is too formal."

However, there is one thing that even good architecture and construction could not address. "Sand," says Lauren, who senses sandstorm. "I just keep warning."



An oval window adds a romantic touch to the upstairs hallway.



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# flowering bulbs

There would be no coisely crocus, iris, or daffodil if not for the hardy bulb. These cool underground packages are young buds bristled with their own supply of nutrients. Just dig a hole and drop them in. Come spring you'll have a chorus of blossoms—here the familiar lantern of the tulip to the exotic 20-inch spike of the lily (Lilium). Here's a list of the bulbs you'll find on this page. Most bulbs originated in mountain regions, particularly of the Middle East and Mediterranean, and flower only after an extended stay in the cool earth. Planted in the coming fall weeks, these hardy perennials will perfectly pass the winter until spring's warmth triggers their growth; some early in the season, some later. Choose for their varied bloom times, a well-photographed cast of bulbs will perform all seasons long.

By JAYAN KORTINE  
Photograph by MARY BAKER

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## early spring



Bulb bulbs are listed by color and planting depth: 1) Tulip, 'Early', 2-4 inches; 2) Tulip, 'Early', 2-4 inches; 3) Tulip, 'Early', 2-4 inches; 4) Tulip, 'Early', 2-4 inches; 5) Tulip, 'Early', 2-4 inches; 6) Tulip, 'Early', 2-4 inches; 7) Tulip, 'Early', 2-4 inches; 8) Tulip, 'Early', 2-4 inches; 9) Tulip, 'Early', 2-4 inches; 10) Tulip, 'Early', 2-4 inches.



late spring

they last your whole life?

**House**  
SALES

1) *Alum. arborescens* 'Purple Sensation' (flowering onion); 4-6 inches. 2) Corncock quailweed 'Blue Melody' (blue corncock); 4-6 inches. 3) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches. 4) *Alum. x* 'Sensational' (Sensational); 5-6 inches. 5) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches. 6) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches. 7) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches. 8) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches. 9) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches. 10) *Alum. x hollandica* 'Gambeliana' (Dutch iris); 5-6 inches.



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**2. TUBULAR RULER PLANTER** Works best in prepared (turned and loosened) soil. The cylindrical blade cuts out a plug of soil and brings it to the surface, creating a wide hole suitable for even the largest bulbs.

**3. RULER** Each type of bulb must be planted with the bottom at a specific depth; a ruler makes sure you've got it right. (Planting depths are listed on packet, label.)

**4. FORKED RULER PLANTER** Allows planting in tough, unprepared soil. Step on the crossbar with one or both feet, then loosen the dirt with a rucking motion.

**5. LONG-HANDED TROWEL** This long spoon is perfect for digging a hole deep enough to stack several different types of bulbs (see "Cook's Recipe," below). Most go in at a depth two and a half times their height.

**6. SHOVEL** For the easiest bulb planting, choose a shovel closest in size to the bulb. The bigger the shovel, the more effort it takes to use it.

**7. SPADE TROWEL** Cuts and lifts turf for shallow-planted bulbs; also good for yanking up small weeds by digging blades backward.

## Cook's Recipe

To get the most out of a limited amount of planting space, this EM House landscape contractor Roger Cook likes to make a "bunk bulb combination." "All you need to do is dig one big hole, then layer in these bulb varieties according to their different bloom times," says Roger. "Grecians, tulips, and daffodils are a good trio." Spring will bring sequential waves of flowers in the same spot. As the early-blooming daffodils fade, they'll be followed by a couple of weeks later by fresh-faced tulips, then, in another few weeks, a full set of daffodils. An added bonus: Each plant's new growth will help camouflage the wilting flowers and leaves of its predecessors.

The hole should be 10 inches deep, but can be any size or shape. A 12-inch-diameter planting area, for example, can accommodate 7 to 8 daffodil bulbs. Before putting them in, mix a tablespoon of an 8-8-8 fertilizer with the loose soil at the bottom, then gently twist the body, broader end and of each bulb into the dirt to establish good contact; the plants will be lying up. Be sure to space the bulbs so they don't touch one another, since overcrowding can stop them from blooming.

After covering these deep bulbs with four or five inches of soil, put 10 to 12 tulips, which do best five or six inches below the surface. Add another two or three inches of soil, and the planting area is ready for 12 to 15 small crocus bulbs. Fill the hole to the top with more soil and water the area with water. Keep it moist throughout the fall, then leave it dry until spring. The reward is a four-to-six-week-long period of flowers.



Photo: Bob Orr, an emphoto

# DIRECTORY

WHERE TO FIND IT, PAGE 131 • TV CLASSICS, PAGE 131 • PROGRAM SCHEDULE, PAGE 131



PHOTOGRAPH BY

OUTTAKES  
pp. 14-18

"Family Placed," page 14—Landscape contractor Royer Cook, K208 Torr and Leadwicks, Burlington, MA, 781-271-6109. Landscape architect David Hawk, Hawk Design Inc., Boston, MA, 617-242-8300. "Renee Elliott," page 16—National Trust for Historic Preservation, 980-315-6847, www.nationaltrust.org. "Dance Hopes," page 16—Greenleaf contractor Bob Gagliardi, Gagliardi Contracting, Westwood, MA, 417-636-3194.

HOUSE CALLS WITH STEVE  
pp. 18-22

Kitchen designer Jilly Ross, Jilly Ross Designs, Montclair, NJ, 973-744-3146. Page 22—Jeff is right! Headline available: C1296 Mountain Mist by Pottery Barn Kids, 800-913-1324, www.potterybarnkids.com. Cork table Larkin by Nature of Cork, 308-484-1673, www.potterybarnkids.com. Vinyl tile: RM513M Ramona Marble Motif: Green by Amtico, 800-281-9993, www.amtico.com. Roundtop tile: Maradonna R37 Spot plate by Fiebi Industries, 800-842-7339.



House Calls With Steve, p. 18: Remodeling a family and creating outdoor food space for a young family in the Mountain Mist by Pottery Barn Kids.

www.potterybarnkids.com. Cork tile: CH202T-1 Universal Spongel by Cork America, 800-735-2675. Cork tile: Redwood 2 by CottageCork, 308-484-1673. Vinyl tile: RM513M Ramona Marble Motif: Green by Amtico, 800-281-9993, www.amtico.com. Vinyl tile: 21228 Tampa Bechtel by Amtico, 800-281-9993, www.amtico.com. Linoleum tile: 19975 Yellow Stone by Amtico, 800-281-9993. Vinyl tile: MT2132 Dylacore Lead by Amtico.

ASK NORM  
pp. 24-26

Beck: The Beck Industry Association, Reston, VA, 703-680-0070, www.beck.org. Copper: Copper Development Association, New York, NY, 212-231-7200, www.copper.org. Cedar: Western Red Cedar Lumber Association, Vancouver, BC, Canada, 604-634-0266, www.wrcal.org. Boardwalk: The National Boardwalk Company, Rochester, NY, 800-330-1070, www.boardwalk.com. Jamb (lamin): Boardwalk Lumber Co., Andover, MA, www.bwco.com. Dry springs: The Cannon Wonder Springs, The Cannon Group, Canaan, MA, 800-221-0861, www.cannonsp.com. Lead safety: National Lead Information Center Clearinghouse, 800-424-5324, www.epa.gov/leadclearinghouse.

LUXURIES: GARDENS UNDER GLASS  
pp. 26-28

Greenhouse manufacturer: America Greenhouses, 800-449-3348, www.america.com. Architectural Glass Inc., Seattle, WA, 206-244-6107. Greenhouse accessories: Rensel Greenhouse Systems Inc., Hudson, New Hampshire, 603-746-6144. TreeLand Treehouses, Petaluma, CA, 800-438-4326, www.treehouse.com. Charley's Greenhouses and Gardens, Mount Vernon, WA, 800-322-6707, www.charleysgreenhouses.com.

TECHNOLOGY  
ON THE SAME WAVELENGTH  
pp. 40-47

Phone ethernet gateway: 3Com Home Ethernet Gateway by 3Com, 877-845-3366, www.3com.com. Wireless gateway: Airport Base Station by Apple Inc., 800-692-7753, www.apple.com. HomeCenter Home Wireless Ethernet Gateway by 3Com. Cat 5 and Cat 6 composite wires: LAN-tek.com, a division of Arcom Services Inc.,

Clio, NJ, 877-247-1233, LANtek.com.

MATERIALS: A SAFE FIX  
pp. 48-52

Beams products: Jett, Impact Foods, Best Case liquid, and Timber powder, from Preservation Resource Group, Rockville, MD, 801-309-2223, www.prgroup.com. Borate-treated building materials: Sealed Guard products, Louisiana Pacific Corp., 800-330-4376, www.americanlumber.com. Ultra-low-carbon fiber insulation, Insulated Logic, Chandler, AZ, 480-613-9114, www.bondlogic.com. One-Quik to U.S. House, Valencia, CA, 661-267-3400, www.onequik.com.

"A Safe Fix," Materials, p. 48: Nonmetallic structural components, like the liquid gel shown here, can protect concrete against subsidence or rot.



Shirley Brown, Bedford Historical Society, Bedford, NY, 914-234-7039. John Sehl, Advanced Repair Technology, Cherry Valley, NY, 607-264-5040. Sandy Morgan, U.S. Forest Products Lab, Madison, WI, 608/331-9200, www.fpl.fs.fed.us. Wood Polymers, Tackle Service, Knoxville, TN, 865-671-0236.

BY DESIGN: CABINET DECISION  
pp. 56-63

Architect: Nick Buxley, Morrisville, NJ, 973-631-1144. Cabinet maker: Chuck Bachoff, Bachoff Cabinet Making, Whippoorwill, NJ, 973-428-8933. Milk-paint supplier: Old-Fashioned Milk Paint Co., Greens, MA, 978-448-4706. Page 62—In cabinet: White pickets, porcelain eating bowls, Java tea service, built-in counters, Portsmouth Windows Case by Best, 800-567-6695, www.bestwindows.com.

TALKING SHOP: CARRY ON  
pp. 62-64

Page 62—From top: 200-pound-capacity

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**Figure 2** *Continued*



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